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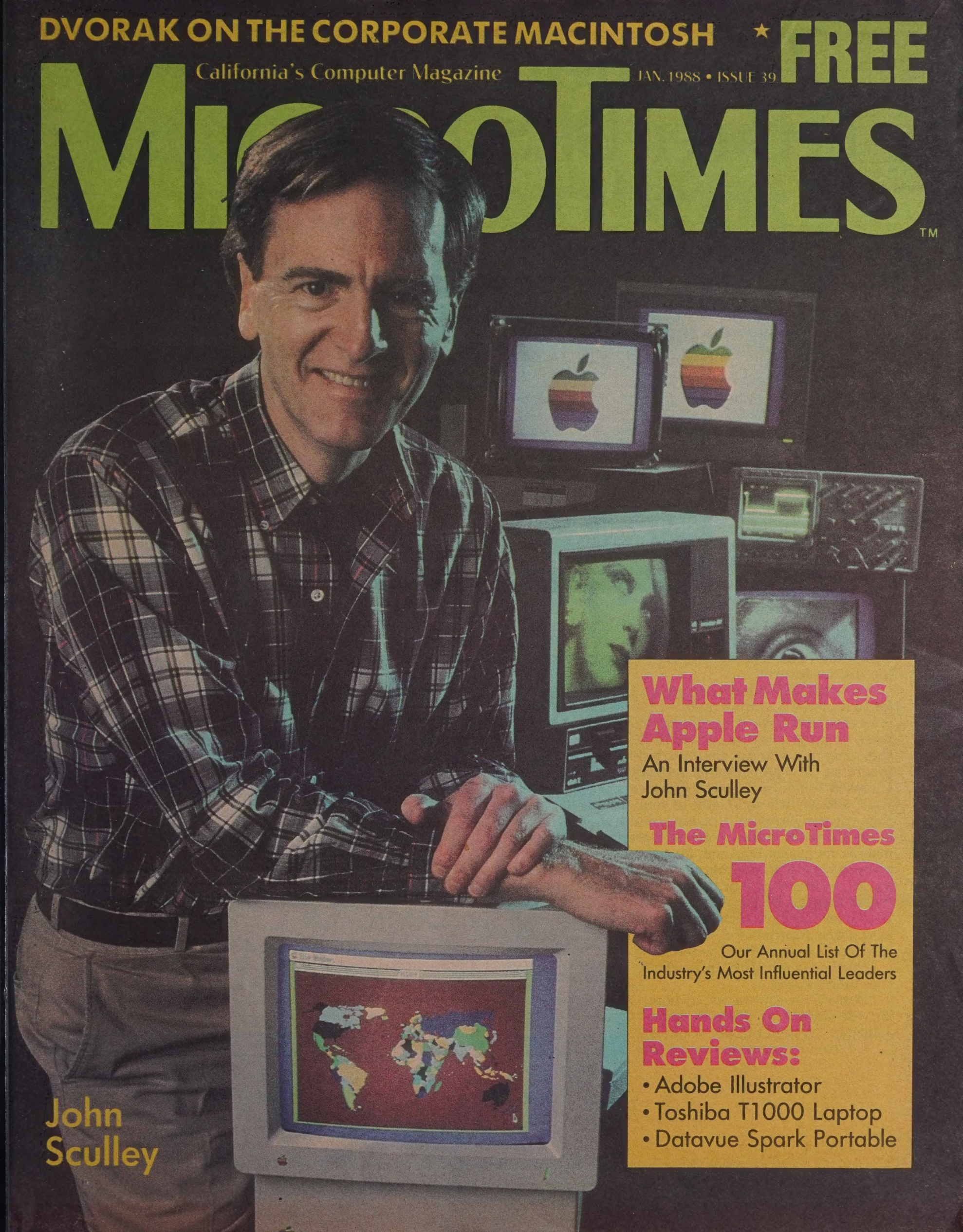
California's Computer Magazine

JAN. 1988 • ISSUE 39

MicroTIMES™



John Sculley

What Makes Apple Run

An Interview With John Sculley

The MicroTimes 100

Our Annual List Of The Industry's Most Influential Leaders

Hands On Reviews:

- Adobe Illustrator
- Toshiba T1000 Laptop
- Datavue Spark Portable

How to tell the difference between DESQview™ 2.0 and any other environment.

Selecting DESQview, the environment of choice, can give you the productivity and power you crave, without the loss of your old programs and hardware. If you like your existing programs, want to use them together, transfer data between them, print, sort, communicate with or process-in-background, yet still have the need to keep in place your favorite PC(8088, 8086, 80286 or 80386), DESQview is the "proven true" multitasking, multi-windowing environment for you. Best of all, DESQview 2.0 is here now, with all the money saving, time saving, and productivity features that others can only promise for the all-too-distant future.

And with DESQview's new graphics enhancements for Hercules, CGA, EGA, and VGA, Version 2.0 still offers the same award winning and pioneering features for programs that earned DESQview its leadership, only now you can also run desktop publishing programs, CAD programs, even GEM-™, Topview-™, and Microsoft Windows-™ specific programs. In some cases you'll add as little as 10–40K to your system overhead. Now you can have multi-tasking, multi-windowing, break the 640K habit too and still get an auto dialer, macros, menus for DOS and, for advanced users, a new complete application programmer's interface capability. No wonder that over the years, and especially in recent months, DESQview, and now DESQview 2.0 have earned extravagant praise from some of the most respected magazines in the industry.

"Product of the Year" by readers vote in InfoWorld.

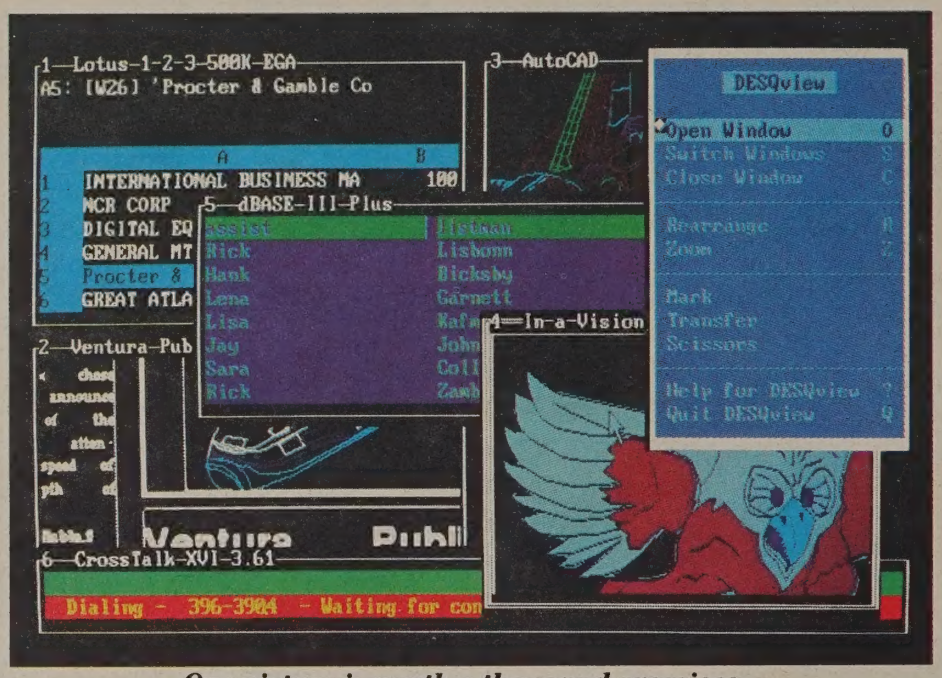
"Best PC Environment" by popular vote at Comdex Fall in PC Tech Journal's "System Builder" Contest.

"—I wouldn't want to run an IBM or compatible computer without DESQview"—InfoWorld, Michael Miller.

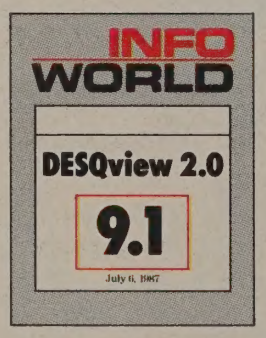
"A colossus among windowing environments"... "will run almost anything"—PC Week, Marvin Bryan.

"Windows, promises, but DESQview delivers"—MICRO-TIMES, Birrell Walsh.

No other environment has consistently pioneered features, openness, and productivity. See for yourself. Send in the coupon. The possibilities are endless with DESQview 2.0.



One picture is worth a thousand promises.



Attention Programmers: For more information about Quarterdeck's API, and future 386 program extensions, call us today.

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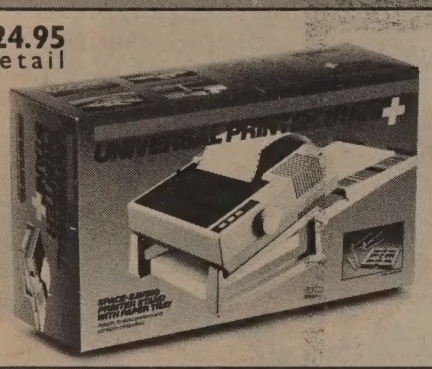

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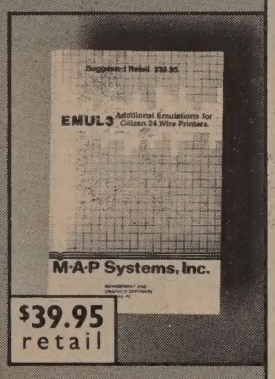

Software with LQ, MX, and FX emulation.

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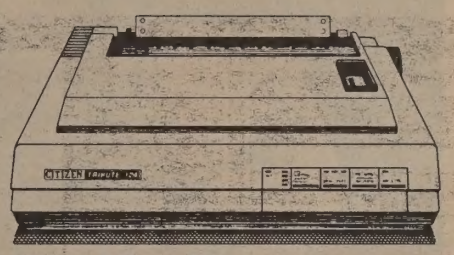

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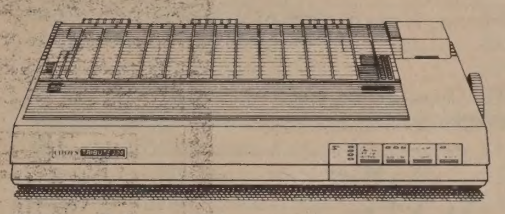

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MICROTIMES

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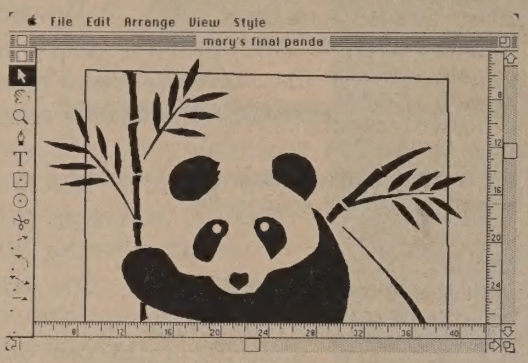

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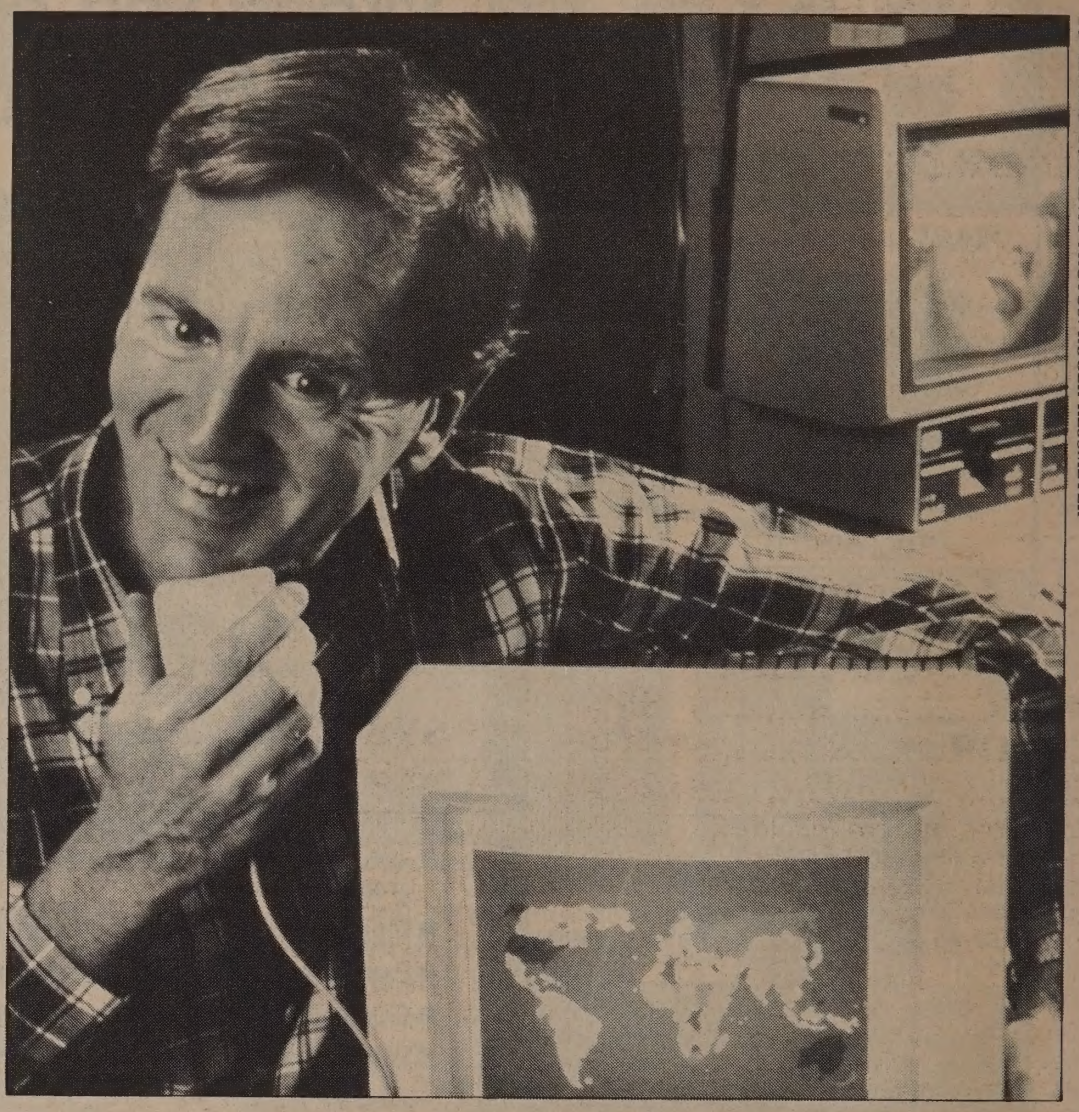

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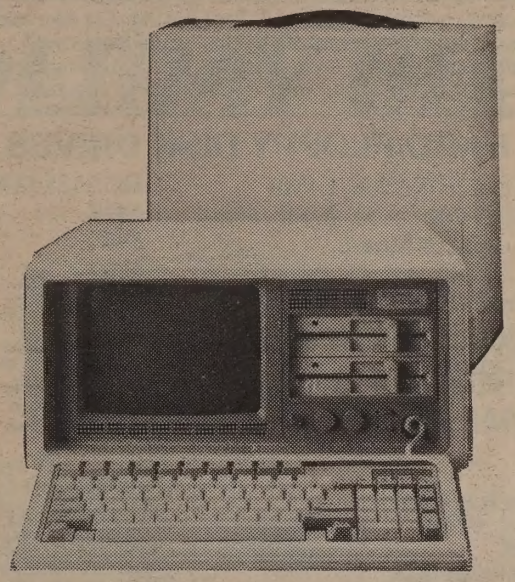

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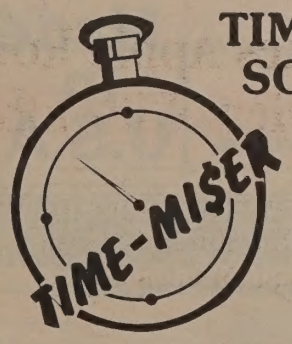

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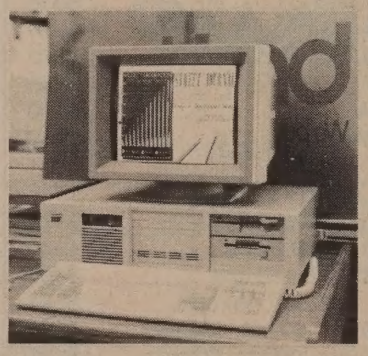

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This Vol. 5. No. 1, January 1988, Whole No. 39 MicroTimes, California's Computer Magazine, is published by BAM Publications, Inc., 5951 Canning St., Oakland, CA 94609. Phone (415) 652-3810. Los Angeles Office, 1800 N. Highland, Suite 220, Hollywood, CA 90028. Phone (213) 467-7878. San Jose Office, 36 Harold Ave., Suite 8, San Jose, CA 95117. Phone (408) 244-4400. Anaheim Office, 800 S. Brookhurst, Suite 1F, Anaheim, CA 92804. Phone (714) 776-2900.

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Subscriptions rates: 12 issues, U.S.: 3rd Class $24 (Allow 3 to 4 weeks for delivery), 1st Class $50 (Allow 1 to 2 weeks for delivery). MEXICO & CANADA: Surface Mail $40 (Allow 4 weeks for delivery), Air Mail $65 (Allow 1 week for delivery). OVERSEAS: Surface Mail $40 (Allow 6–10 weeks for delivery), Air Mail $160 (Allow 1 week for delivery). To receive sample issues, please send $1 ($4 for overseas) to cover postage costs. Back issues are $4 each.

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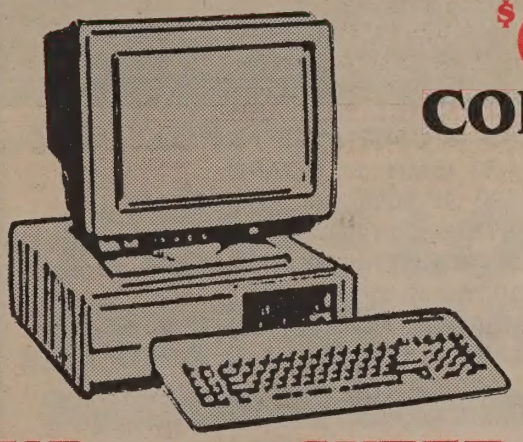

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November 27–29 Forth Modification Laboratory (FORML) Conference. Asilomar Conference Center, Pacific Grove, CA. Contact the Forth Interest Group at (408) 277-0668 or write FORML, P.O. Box 8231, San Jose, CA 95155.

November 29 Computer & Hi-Tech Flea Market. Veterans Memorial Building, 4117 Overland Avenue, Culver City. Call (213) 276-1577 for information.

November 30–December 1 Networking IBM & Compatible PCs. Anaheim. Two Day Seminar. Contact Quest at (201) 251-3217.

December 1–3 Computer Science Engineering Short Courses. UCLA Campus. Contact the UCLA Extension Department of Engineering and Science, P.O. Box 24901, Los Angeles, CA 90024. (213) 825-3858.

December 5 Computer Swap. LA County Fairgrounds, Pomona. Call RK Productions at (800) 252-7927 for information.

December 5–6. MIDI Expo. New York Hilton. Contact Expocon at 3695 Post Road, Southport, CT 06490. (203) 259-5734.

December 7 Stress Management For The Working Woman Seminar. San Diego, Stardust Hotel. The Business Women's Training Institute. (800) 423-6540.

December 8 Stress Management For The Working Woman Seminar. Los Angeles, Hyatt Wilshire. The Business Women's Training Institute. (800) 423-6540.

December 9 Stress Management For The Working Woman Seminar. Anaheim, Sheraton Anaheim. The Business Women's Training Institute. (800) 423-6540.

December 10 Stress Management For The Working Woman Seminar. San Bernardino, Inland Empire Hilton. The Business Women's Training Institute. (800) 423-6540.

December 12 Computer Show. Orange County Fairgrounds, Costa Mesa, CA. Contact Microshows (800) 433-7469.

December 19 Computer Show. Pasadena Center, Pasadena, CA. Contact Microshows (800) 433-7469.

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January 2 San Fernando Valley Computer Swap. CSUN, North Campus, Northridge, CA. Contact Microshows (800) 433-7469.

January 11–12 Networking IBM & Compatible PCs. Los Angeles, CA. Two Day Seminar. Contact Quest at (201) 251-3217.

January 16–18 AmiEXPO. Westin Bonaventure, Los Angeles. Call Dave Glassman at (800) 322-6442 for information.

January 23 Computer Swap. Orange County Fairgrounds, Costa Mesa. Call RK Productions at (800) 252-7927 for information.

January 25–27 The Desktop Communications Conference. Marriott Hotel, Anaheim. Contact Infonetics at (408) 746-2500.

January 30 Computer Swap. LA County Fairgrounds, Pomona. Call RK Productions at (800) 252-7927 for information.

*As a community service, **MicroTimes** lists trade shows, seminars, and other special events in the Calendar of Events free of charge on a space-available basis. To improve the likelihood of your listing's timely inclusion, please make sure we have the necessary information no later than the first of the month, two months before the cover date of the issue in which you'd like it to appear (i.e. the deadline for the March issue, distributed during February, is January 1). Send to: MicroTimes Calendar of Events, 5951 Canning St., Oakland, CA 94609.*

News about user group meetings and other regularly scheduled activities should be sent to User Group Network at the same address.

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NEWS AND ANALYSIS

By Paul Hoffman

OS/2 To Ship In December, IBM's Extended Edition To Ship In July

IBM announced at COMDEX that its version of OS/2 will ship in early December, catching many competing manufacturers off-guard. Microsoft also announced that it will ship final OS/2 packages to manufacturers later in December. There were no surprises about the features of OS/2 due to the wide distribution of OS/2 development kits from both IBM and Microsoft in recent months. Both IBM and Microsoft were showing the multitasking operating system running in their booths. IBM's package is called OS/2 Standard Edition 1.0.

At the same announcement, IBM gave its schedule for release of other OS/2 versions. Extended Edition 1.0, which includes an advanced relational database manager based on SQL technology and a commmunications manager for coordinating communications with other computers as well as terminal emulation, will be released in July 1988. IBM's booth was jammed at the stations where they were showing demonstrations of Extended Edition. According to IBM, Extended Edition will be the first offering to participate in IBM's grand Systems Application Architecture (SAA) framework.

SAA is a precisely-stated standard on how operating systems can both communicate and share work. For example, if you are running a database application under Extended Edition and are connected to a mainframe such as an IBM 9370, part of your data processing can be performed on the mainframe without your intervention. Extended Edition 1.0 will contain most of the code required for SAA. IBM has also announced SAA extensions for its System/3X and System/370 series computers.

IBM also announced that the Presentation Manager, another part of SAA, will be available in both OS/2 Standard Edition 1.1 in October 1988 and OS/2 Extended Edition 1.1 in November 1988. The Presentation Manager gives you a standard method for showing programs that are running at the same time on the screen. This is especially important for IBM, since the Presentation Manager will lay the groundwork for the user interface on other SAA operating systems as well.

IBM's Standard Edition 1.0 will cost $325 when it is released, while the Extended Edition 1.0 will cost $795. Upgrades to version 1.1 for each operating system will be free. In a radical shift for IBM, both operating systems are covered by a 90-day warranty, which can be extended to a year for a fee. In the past, IBM has provided no direct service for its PC DOS operating system.

IBM staff in the booth made it very clear that Extended Edition will be available from IBM only, not from Microsoft. As one IBM employee who requested anonymity stated, "The Database Manager and Communications Manager are based on true-blue IBM technology: we're not about to sell that to anyone." The Database Manager is very similar to IBM's DB2 and SQL/DS mainframe products, which have been under attack in the last year from competitors in the mainframe software market. The Communications Manager provides an all-in-one approach to token-ring, direct-connect, and modem communications. One part of the package even lets the system administrator prevent certain users from using specific programs.

IBM disappointed many LAN manufacturers by announcing its LAN Server that will require Extended Edition version 1.1. LAN Server will thus only work on IBM PS/2 hardware and not on other computers. This puts Microsoft and 3Com in a tough situation, being forced to compete with IBM with their own LAN Manager products. IBM said that LAN Server will control security, printer management, and shared file services on a token-ring LAN. It will be released in November 1988 and will cost $995.

A few of IBM's competitors will have OS/2 available soon after IBM. Marty Taucher, spokesperson for Microsoft, said that he expects some manufacturers to finish their final steps of fitting OS/2 to their computers within weeks of Microsoft's shipment to them. He notes that others may take significantly longer. "Some of them didn't believe that we would deliver on time and haven't been working too hard on their ports. Getting OS/2 on a computer will involve much more thinking than MS-DOS did."

Developers working on OS/2 programs were elated by the announcements. Although many are still months, if not years, away from releasing programs that take advantage of OS/2's features, many who were showing preliminary versions of programs in Microsoft's booth hoped that the early release will cause a groundswell of support for the operating system. Those showing products included Borland (*Paradox*), MicroPro (*Wordstar 2000*), MicroRim (*R:BASE*), Digital Communications Associates (*IRMA*), Micro Database Systems (*MDBS*), and Microsoft itself (languages). An interesting note in the press releases that came with the various OS/2 announcements. All of IBM's press releases stated at the end that "OS/2 and Operating System/2 are trademarks of IBM," while Microsoft's press releases give no credit for a trademark on OS/2. Also, IBM capitalizes "Presentation Manager" and claims a trademark on it; Microsoft does not capitalize it or give credit for a trademark.

Mosaic Announces Twin Follow-Up

Mosaic Marketing, Inc., creators of *Twin, a Lotus 1-2-3* lookalike program, announced the release of *Diamond*, another *1-2-3* lookalike with added word processing and business graphics capabilities. *Diamond*'s word processor includes a spelling checker and thesaurus, and the graphics package contains a wide variety of graphic formats for data. The spreadsheet is compatible with versions 1A and 2 of *1-2-3*. The cost is $195. Mosaic Marketing, Inc., (617) 491-2434. Mosaic has been in the news recently as the object of a Lotus copyright infringement lawsuit that is awaiting trial in Boston. At a meeting with lawyers November 9, Judge Robert E. Keeton indicated that he felt that many of the pre-trial actions in Lotus v. Mosaic could be combined with a similar case of Lotus v. Paperback Software as well as the related SAPC v. Lotus case. Judgement on pre-trial motions have been delayed due to Judge Keeton's presiding over the lengthy federal case against Lyndon LaRouche.

Software Runs MS-DOS Programs On A Mac II Without Extra Hardware

Insignia Solutions introduced a low-cost alternative to running MS-DOS programs on the Macintosh II. Instead of an add-in board, Insignia is offering a software package called *SoftPC* for the Mac II that emulates an IBM PC/XT under the as-yet-unreleased A/UX operating system. According to Thomas Billings, president of Insignia, *SoftPC* runs all major MS-DOS software without a hitch. Since A/UX is a multi-tasking operating system, you can run many MS-DOS programs at once with *SoftPC*, and files can be shared with A/UX programs. The cost is $595, and the program will be available in January 1988. Insignia Solutions, (415) 771-7001.

Aldus Upgrades PageMaker For The Mac And PC

Aldus Corp. showed eager COMDEX attendees its newest versions of *PageMaker*, the leading desktop publishing package for the Macintosh and IBM PC. Although the new support for color drew many oohs and aahs, Aldus was quick to note that inexpensive high-quality color printers were still years away. A more significant new feature in the programs is the support for style sheets. Style sheets allow you to set the formatting characteristics for a type of text (such as headlines or lists) once for the entire document. For example, changes made to the headline style sheet are reflected in every headline automatically. Another popular new feature was the ability to wrap text around irregularly shaped graphics. The programs will be available in February 1988.

Aldus also announced *FreeHand*, an illustration program for the Macintosh. *FreeHand* is an advanced drawing program that allows you to draw complex images for output on an Apple LaserWriter. According to Aldus, the program will compete with *Adobe Illustrator* and is much easier to use. Aldus Corp., (206) 628-2375.

Atari Attacks The High End Market With New Transputer

Atari recently showed a very-high-end computer that uses the Atari ST or Mega computer as a front end. The Abaq computer, based on a 10 million instructions-per-second Inmos T-800, will turn the Atari into a workstation that runs about ten times faster than an IBM PC/AT. Additional transputer boards (each which comes with four megabytes of RAM) can be added to the unit and will run in parallel. The system runs a multi-user, multi-tasking operating system specially designed for engineering and scientific computing. Like other workstations, the Abaq supports very-high resolution graphics at high speeds. Atari staffers at COMDEX predicted that it will be available by mid-year 1988 and will cost around $5000. Atari Corp., (408) 745-2000.

Genicom Announces New Laser Printer Architecture

Breaking away from the PostScript and PostScript clone market, Genicom announced a new, low-cost technology for creating text and images on laser printers. The new printer controller uses the ACE printer controller language (PCL) instead of PostScript or competing PCLs in order to greatly speed up printing and reduce the cost of the printer. According to Geniecom, ACE can print pages with 512K of RAM memory in the printer, compared to PostScript which often requires much more. Genicom showed preliminary versions of its printer software at COMDEX, including a

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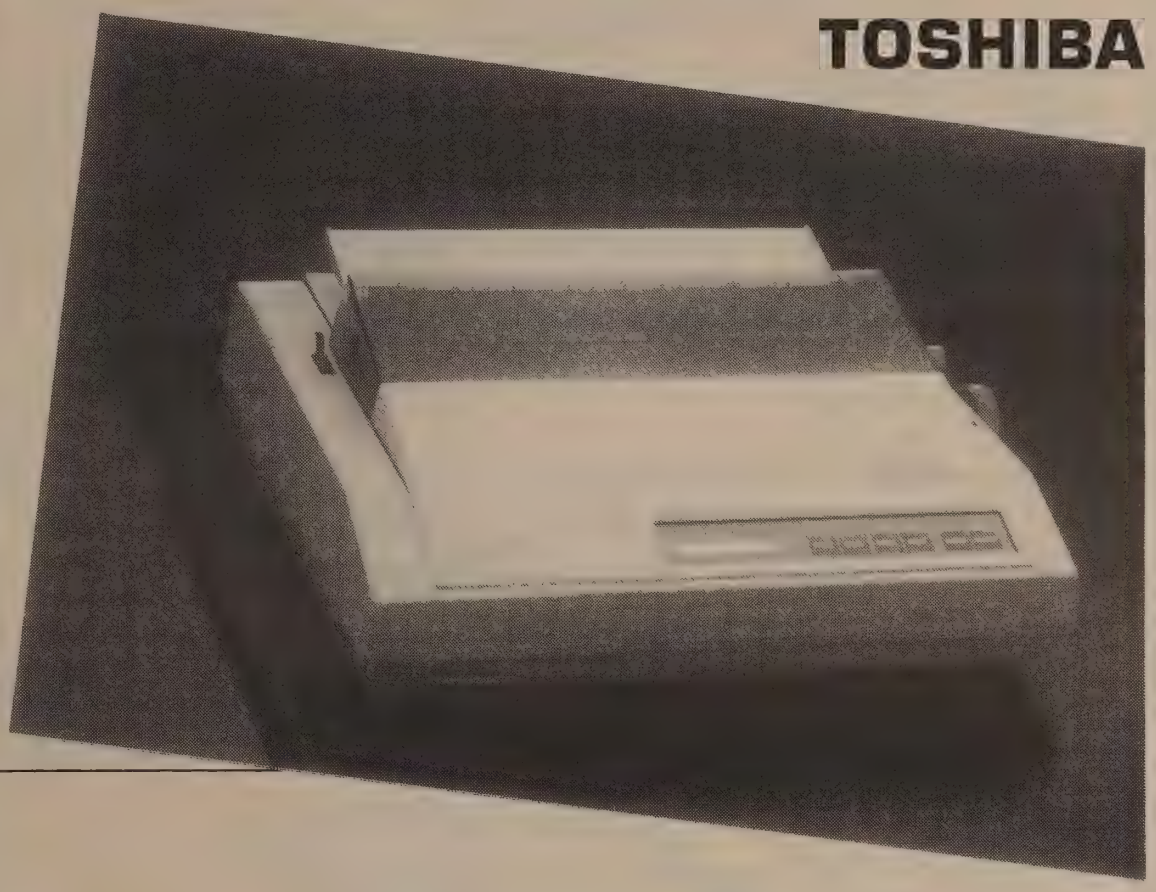

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QuickDraw driver for the Macintosh which produced 400 dot-per-inch, high-resolution pages with graphics at 8 pages per minute. They also displayed a driver for *Microsoft Windows*, with Aldus *PageMaker* printing complex pages at similar speeds. It said that it expects to announce printers using the technology in the next few months, and that the printers would be less expensive and have higher resolution than its competitors PostScript counterparts. Genicom, (703) 949-1188.

THEOS Debuts 386-Based Operating System

A new version of the THEOS multi-user, multitasking operating system now runs on 80386-based computers. THEOS 386 can handle up to 128 simultaneous users on a single system, and can address up to 4 gigabytes of memory. Although it has been perpetually overshadowed by CP/M, MS-DOS, and UNIX, the THEOS operating systems has survived since 1977 in niche markets and has a large following overseas. THEOS 386 is compatible with earlier THEOS products, giving it a base of hundreds of commercial applications already on the market. THEOS Software Corp., (415) 935-1118.

Lotus Previews Agenda

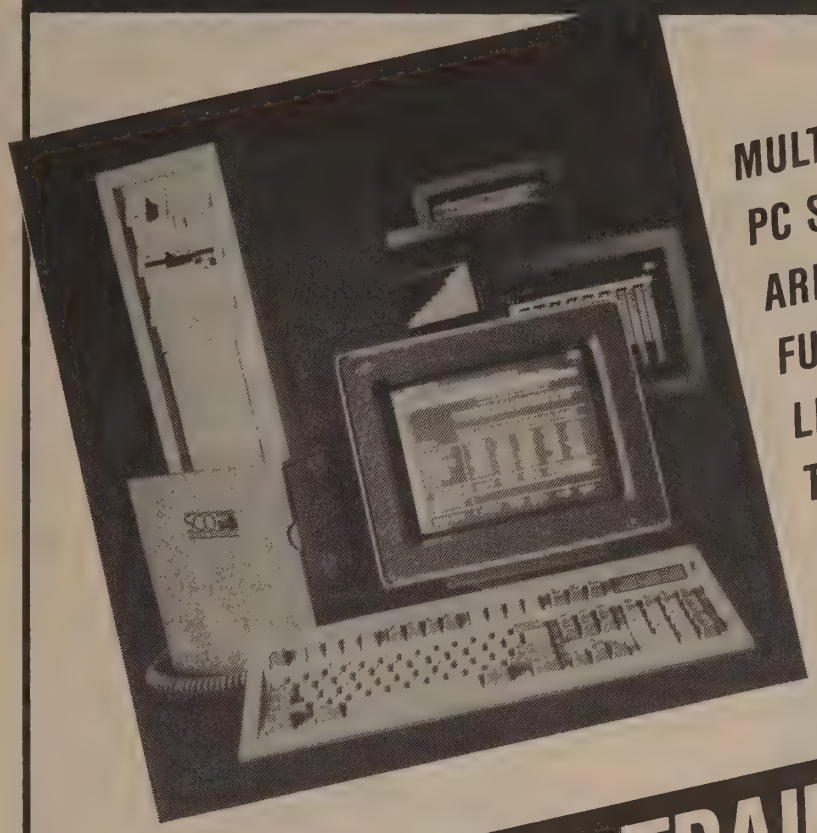
Calling it a "personal information management package," Lotus revealed its much-rumored next product at COMDEX amid a swirl of glowing prereviews. *Agenda*, which will be released sometime in the next eight months, organizes your notes, ideas, clippings, schedules, and other text-based information. Unlike current programs, which mostly give you a structure for your data, *Agenda* structures it for you using intelligent rules.

In *Agenda*, each item you enter in the program is an item that can be categorized by broad rules. For some things, you assign a category yourself (such as high, medium, or low priority). You can also use *Agenda*, however, to assign categories for you. For example, if you enter a note "See Jim tomorrow about the car," *Agenda* will automatically put the note in the category for Jim. In fact, if you have a category on dates, *Agenda* will look at today's date, add 1 to it (since the note was about tomorrow), and put the note in the category for things to be done tomorrow.

Like other data base systems, *Agenda* displays your data in a wide variety of ways. Similar to *Lotus 1-2-3*, the displays are in rows and columns. Unlike *1-2-3*, however, you can sort rows on the fly, showing totals or groups of information. During the COMDEX demonstrations, *Agenda* reorganized thousands of records in many different arrangements in under a second. *Agenda* will print to a wide variety of printers, and you can even customize its printer setup.

Two major features make *Agenda* stand out from other information organizers. First, it can mix information from a wide variety of sources. For example, you can read news items in from your modem and put them in the same information base as your notes to yourself. Unlike data base managers, you don't have "fields" to fill in. Second, you can attach notes to an item; *Agenda* only processes the information in the item. A note can be a memo, report, or other text up to about 10 pages long. Whenever you want to see the note attached to an item, it is readily available.

Industry observers were quite impressed with the demonstration. Esther Dyson said in her *Release 1.0* newsletter, "Like *Lotus 1-2-3*, *Agenda* has enough power and extensibility that users may well use it as an environment even though the system is not yet built to be used that way." Others noted with satisfaction that Lotus wasn't screaming "artificial intelligence" from the rooftops, even



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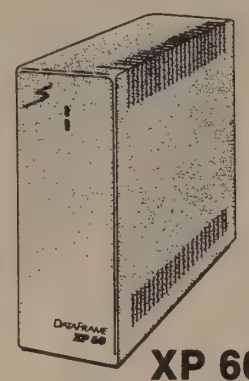

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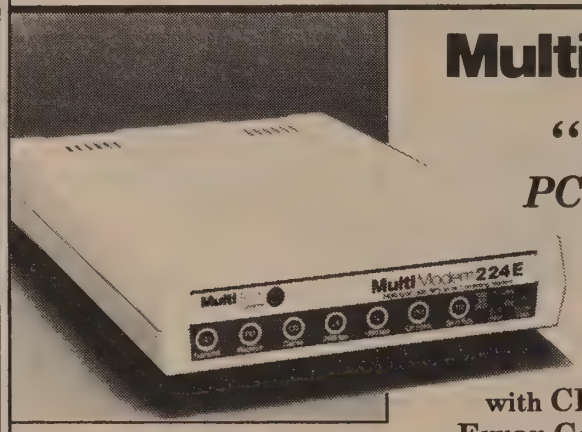

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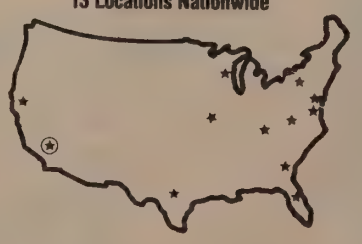

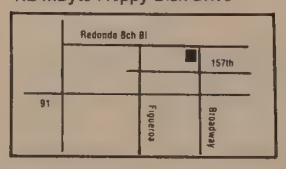

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though there is a great deal built into Agenda.

In its first release, *Agenda* will be available for both MS-DOS and OS/2. Lotus mentioned Macintosh and *Windows* as likely next steps for *Agenda*. It will cost $395. Lotus, (617) 577-8500.

Xerox Uses Sun Chip In Document Processors

Sun and Xerox jointly announced Xerox's intention to use the new Sun SPARC chip and associated UNIX operating system in its future document processing products. The agreement was a mutual exchange: Xerox would use Sun hardware and software in Xerox's future products (as well as purchase off-the-shelf Sun workstations for its subsidiaries), and Sun would adapt its operating systems to support the Xerox Network System (XNS). The SPARC (Scalable Processor Architecture) chip is finding wide acceptance in the UNIX market based on its speed, flexibility for future enhancement, and open availability. The agreement will help Xerox spread XNS and help Sun sell more SPARC systems. Xerox, (213) 333-7000; Sun, (415) 960-1300.

Asher Announces Board For Background Fax Processing

The Asher Facsimile Division of Quadram is now marketing a PC board that allows you to send and receive fax while working on other programs on your PC. The board, called the JT Fax 9600, has its own CPU so that it uses very little of the host PC's processing. The software that comes with the board converts word processing and drawing files to fax format and sends them automatically with no additional intervention. Files that are received can be automatically stored on disk, viewed, or printed. Asher claims that this software makes its boards more useful than other background fax boards that use more of the computer's CPU and disk space. The board costs $795, and can accommodate a 1200-baud modem and *Mirror II* software for an additional $200. Asher Facsimile Division, (404) 564-5655.

Computer Dealers List Stolen Computers

In an effort to stem the tide of stolen computers being sold in the used computer market, the National Association Of Computer Dealers is setting up a toll-free number for checking the serial number of used computers before purchase. The NACD will collect and maintain a database of the serial numbers of stolen computers. According to the NACD, this is the first centralized data base of stolen computers. The lack of centralization has cost computer dealers millions of dollars each year since they have no way of checking whether a used computer is stolen or not except to call the local police department. If the computer was stolen in a different city, it is likely not to be on the local records. The hotline will be operational early in 1988, and the hotline's access number for the public is (800) 346-6223. National Association of Computer Dealers, (800)223-5264.

Publisher Seeks Nominations For Second Andrew Fluegelman Award

PCW Communications, publishers of *PC World*, *Macworld*, *Publish!*, and *Macintosh Today*, announced the opening of nominations for the second annual Andrew Fluegelman Award for programmers. The $5,000 award, named after the originator of Freeware,™ is given to a programmer who has made a significant contribution to software development. It will be given at the March

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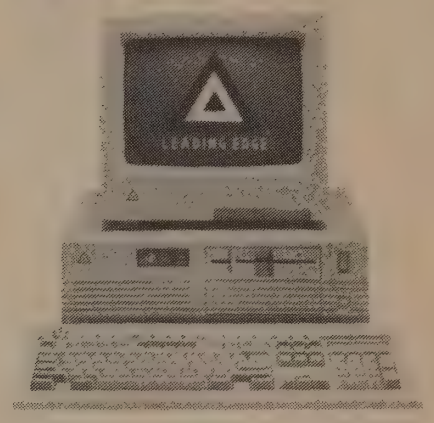

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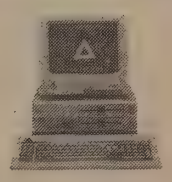

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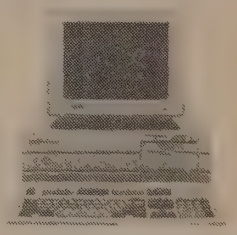

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1988 Software Publishers Association awards dinner. To qualify, a piece of software released between January 1, 1987 and December 31, 1987 must be nominated by someone not involved in its development. Programs are judged on advancement of the state of the art of personal computing, innovation in concept and design, and orientation towards personal computer users. The first award was given to Tom Jennings, the San Francisco creator of FidoNet. Nominations must be postmarked no later than February 1, 1988, and nomination forms can be obtained from Andrew Fluegelman Award, PCW Communications, 501 Second Street, San Francisco, CA, 94107, or by calling (415) 978-3367.

Borland Announces 80386-Specific Version Of Paradox

Paradox has become one of the first major application packages to be available in a version specifically tailored to the Intel 80386 microprocessor. Although many operating systems are being ported to the chip, few applications manufacturers have taken advantage of the chip's advanced structural features. *Paradox 386*, a data base management system, uses the 80386's instruction set to gain greater speed on instructions that are used repetitively in data base operations. Thus, *Paradox 386* runs much faster than *Paradox* on an 80386. In addition, Borland takes advantage of the 80386's larger memory capacity. Since most computers with 80386 CPUs have a megabyte or more of memory, *Paradox 386* can use this memory (up to 16 megabytes) more efficiently than other MS-DOS programs that are limited to 640K of RAM. The program costs $895 and will be available within a month. Borland International, (408) 438-8696.

Radius Announces Two-Page Display For Macintosh SE

Responding to the increasing desktop publishing, graphics, and CAD/CAM markets on the Macintosh, Radius Inc. is now offering a 19-inch display for the Macintosh SE that is capable of displaying two pages of text side by side. The Two Page Display for the SE shows 864 by 1152 pixels at 82 pixels per inch, more than four times the standard Macintosh screen size. The display comes with Radius' Tear-Off Menus software which allows you to use the SE's display to hold menus without obstructing the main display. There is also software to magnify parts of the screen and to change the size of the menus for easier reading. The display with its board for the SE's expansion slot costs $2,395. Radius, Inc., (408) 434-1010.

Lifetree Debuts New Groupware

Following Brøderbund's lead into the nascent area of group productivity software, Lifetree introduced *The TEAM*, an IBM PC program that lets groups of people on a network coordinate calendars, send electronic mail, and perform group project planning. The software helps groups of people collaborate by letting them schedule meetings and tasks. For instance, you can set up meetings for other people on a network automatically without worrying about conflicts. *The TEAM* also performs facilities management, so that a meeting room can also be scheduled for a meeting. The electronic mail is integrated with the calendaring system. *The TEAM* can be run both as a stand-alone and as a memory-resident program. It will run on IBM, 3Com, Novell, and other networks, and will be available in March 1988. Lifetree Software, Inc., (408) 649-3304.

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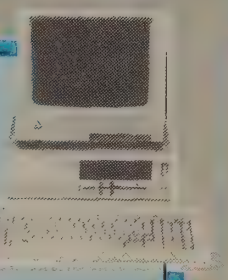

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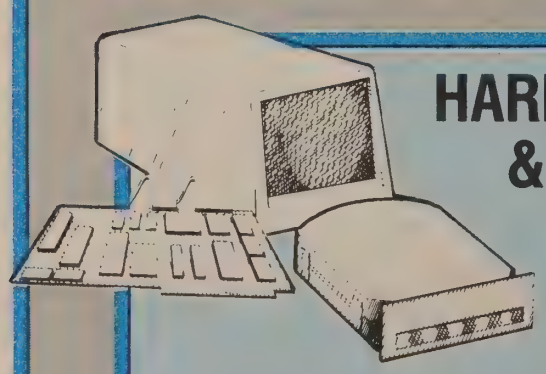

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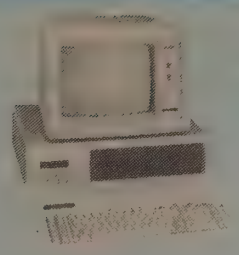

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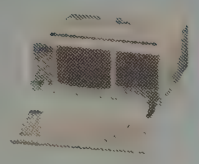

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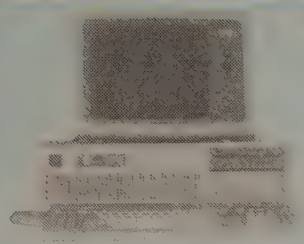

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A+ Mouse

An Optical Mouse For Apple Computers

Manufactured by: *Mouse Systems*
List Price: *$119*
Reviewed by: *Mike Markowitz*

Until recently, the only sort of mouse you could get for your Apple II series computer was an Apple mouse, identical, in fact, to the Macintosh mouse (except you also need an adapter card to make it work with a IIe.) While the Apple mouse is an admirable rodent, many users find that the little rubber ball needs frequent, delicate cleaning, and it tends (with age) to skip.

There is more than one way to catch a mouse. The A+ Mouse, from Mouse Systems, is an optical device, with no moving parts. The good news is that there is nothing to stick, skip or wear out. The bad news is that it costs more, and you need a special optical grid pad, rather than any convenient surface.

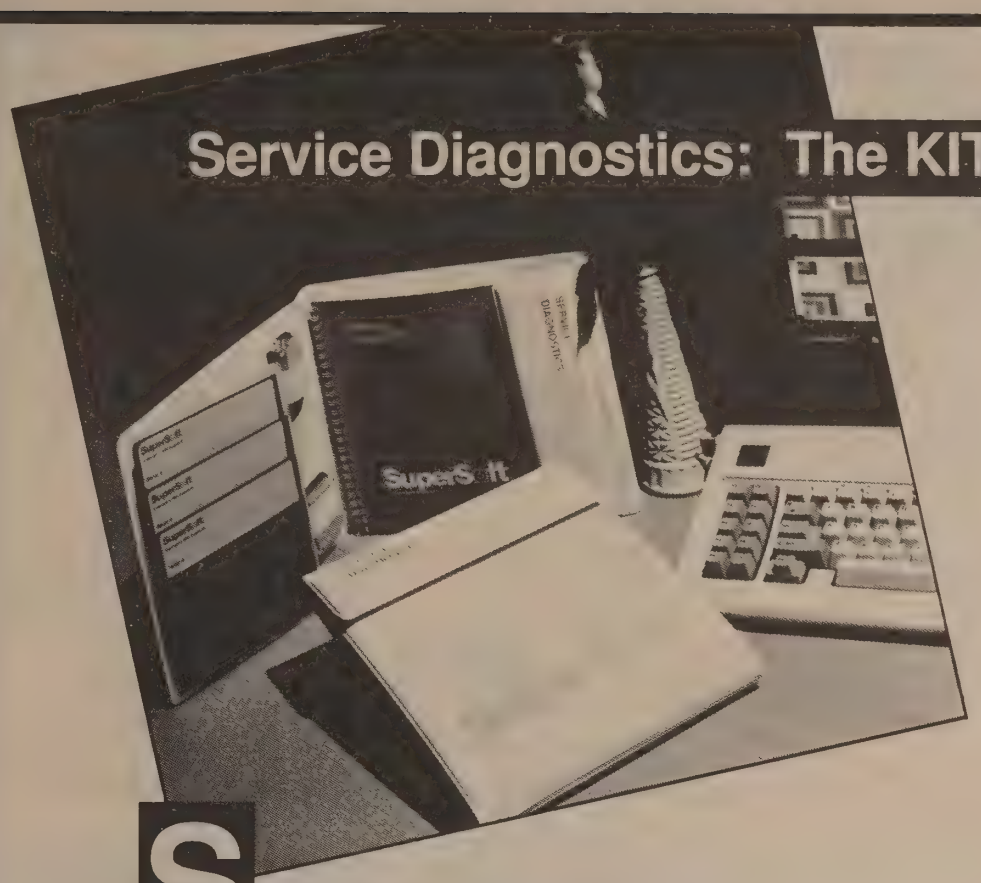
The principle of the optical mouse is quite simple. Inside the box there are two light sources (LEDs) and two light detectors. One pair works in the visible spectrum, and the other works in the infrared, so they don't interfere with one another. The grid pad has fine black lines running in one direction (x-coordinates), and fine blue lines running in the other direction (y-coordinates). As the mouse glides across the grid pad on its felt paws, the detectors see alternating bright and dark bands, which the circuitry inside the mouse translates into x and y displacements.

The A+ Mouse measures 2½" wide by 3¾" long, and stands an inch high. This is somewhat wider and flatter than the original Apple mouse. The cable is about 41 inches long, which is sufficient to accommodate either right- or left-handed users. The DB9 connector has gold-plated pins and a full metal jacket. It is secured to the computer with two captive slotted screws, which are somewhat less convenient than the thumbscrews on the Apple mouse, particularly if you often swap a joystick or other device into the same port. The switch on the A+ mouse button is greatly superior, having a much lighter action and a quieter click.

The A+ Mouse can be used with an Apple IIc, Macintosh Plus, Mac XL or Lisa computer. It also worked on the Laser 128 we tested. With Apple's adapter card it can be used with a IIe or II+. Mouse Systems offers an outstanding limited warranty: "Your mouse and any associated hardware ... are free from defects in material and workmanship and will remain so for as long as you own them." After the first year, repair or replacement of a defective unit carries a $10 service charge.

We tested the A+ Mouse with a variety of software including Mouse Desk, Dazzle Draw, and AppleWorks (modified with a mouse driver). Although the "feel" of the mouse was different, everything worked.

With Apple IIGS and the Mac SE and Mac II, Apple has redesigned the mouse with a new humped shape, a flatter button, a new color ("platinum") and a new four-pin "desktop bus" connector. A friendly and well-informed tech support person at Mouse Systems told me that the company expects to have an optical mouse that is plug-compatible with the new design by the Fall of 1987. (MSC Technologies, 2600 San Tomas Expwy., Santa Clara, CA 95051. (408) 988-0211.)



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WORD PROCESSORS

GraphicWriter

Designed by: *Gary Crandall*
Published by: *DataPak Software (1986)*
For: *Apple IIGS (512K, Imagewriter printer and color monitor desirable)*
List Price: *$149.95*
Reviewed by: *Mike Markowitz*

Any word processor that uses bit-mapped text must pay a heavy price in computing overhead—which translates into slower response for the user. The compensating benefit is the ability to integrate text and graphics. The document becomes a blank canvas, where the writer can type or paint with equal facility. This is hardly news for Mac owners, who have been doing it for years, but for the Apple II environment it still seems like magic. The Apple IIGS has the screen resolution, memory, speed and (above all) system firmware to make it possible.

GraphicWriter by Gary Crandall is the first program for the IIGS to provide effective integrated text and graphics. *GrapicWriter* introduces some unfamiliar new concepts and terminology, and it suffers from poor documentation, but with forthcoming upgrades, it could turn out to be the next *Newsroom*. Two years ago, *Newsroom* from Springboard Software, proved that it was possible to create and market a successful low-end "desktop publishing" program for school, home and small business users. *Newsroom* used 6 or 8 bit-mapped "panels" of text and graphics to compose a page. To fit the limits of a 64K RAM space, each panel had to be separately saved to disk, then read back into memory during printing.

With half a megabyte or more of elbow room, the IIGS doesn't have to go through such gyrations. A full, multicolored page can be displayed and manipulated easily. *GraphicWriter* has an uncluttered screen with a row of drawing-tool icons across the bottom, and a pull-down menu bar across the top. The word processing functions follow the standard user interface established by *MacWrite*. The drawing functions are similar to *MacPaint*, but there are innovative and powerful ways to manage colors.

The fundamental unit in *GraphicWriter* is the "region". Initially, the blank screen is a "bottomless" typing region. You can create any number of "boxed" regions that contain graphic objects or text. Like many programs for the IIGS, *GraphicWriter* shows you only about half a page of working space, but provides a toggle that gives you a reduced view of the full page. You can manipulate regions on the full-page view, but not text or graphic objects.

For users lucky enough to own an ImageWriter II printer, *GraphicWriter* has some unusual color printing options. There is a palette of 26 dithered colors (dithered colors are made by mixing pixels of pure colors and white in various proportions.) You can select "heavy paint," which will conceal anything under it, "water color," which will mix with any underlying color, and let black show through, or "dye," which will color only the black pixels in the underlying image.

GraphicWriter can easily import *AppleWorks* text files from 5¼″ floppy disks. The program also accepts bit-map graphic files created with *Paintworks Plus*, or certain scanners. For Apple II users, accustomed to frustratingly incompatible graphics file formats, this is a friendly and flexible new environment.

GrapicWriter is boxed with a 70-page spiral-bound manual that is well-illustrated but amateurishly written. A tutorial covering the whole process of page composition, from start to finish, would be a great help. So would a quick reference card, or on-screen help menu. Regrettably, *GraphicWriter*

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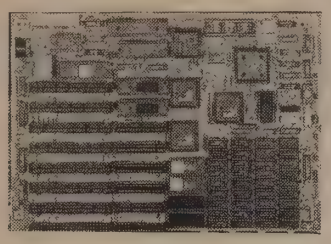

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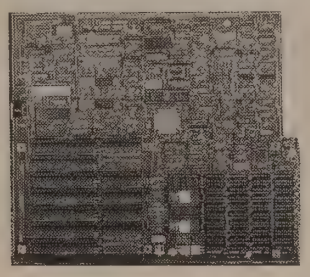

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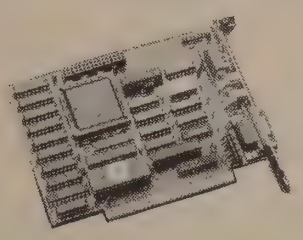

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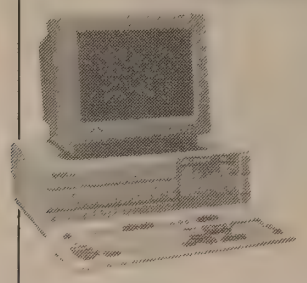

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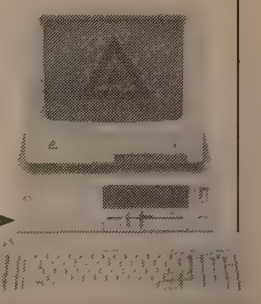

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is copy-protected, but a hard disk installation utility is provided.

By releasing the program while ProDOS 16 (the IIGS operating system) is still in a relatively flaky stage of evolution, DataPak has taken a risk. The LaserWriter printer driver from Apple was not ready for the initial release of the program, but appears in the current verison (1.1R). On the ImageWriter II the program produces very clear and crisp output, especially on the high-quality text setting. Subsequent waves of desktop publishing software for the IIGS may eventually arrive with features that will blow the doors off *GraphicWriter;* but for now, this is the best product available for the IIGS users who need something better than *Newsroom.* (DataPak Software, 14011 Ventura Blvd. #507, Sherman Oaks, CA 91423. (818) 905-6419.)

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Partner 64

By: *Timeworks*
For: *Commodore 64, 128 (cartridge) (reviewed); IBM (Disk), Atari ST (Disk) also available*
List Price: *$59.95 & $69.96 Commodore 64 & 128; $59.95 IBM; $79.95 Atari ST*
Reviewed by: *Sue Albert*

Recently I said "Howdy!" to the *Partner 64* and we became instant friends. The creative programmers at Timeworks have jammed into a single basic black cartridge some real life savers.

After installing a rubber foot to prevent pressure on the connection and seating the cartridge firmly in the slot, the only indication of *Partner's* presence on power-up is an attractive black screen with blue text replacing the washed out blue on blue. While automatically speeding up loading on programs not heavily protected or loaded by sectors, *Partner* remains politely invisible until its button is pushed. The current program is then suspended, and a menu appears offering you an array of time-saving accessories.

SwiftDOS and Screen Print are my hands-down favorite options. Now from within the skimpiest programs I can format a disk, change file names and perform disk chores without reloading. From the SwiftDOS menu, codes may be sent directly to the printer for print style changes within *Partner,* or in my software's printing. With the Screen Print module I can print out text (not graphic) screens and capture those elusive commands that sometimes disappear from the screen just when I need them most.

For those organizational chores computers seem to generate, *Partner* has two full-featured listing programs. The Address List can be saved, loaded, searched, sorted, and printed on either paper, labels or envelopes. It can be used as an auto-dialer in connection with an autodialing modem and will auto-disconnect at the end of a call. The Phone List has all the same features with the exception of label and envelope printing.

Users with the required machine language skills can reprogram or write their own *Partner* utilities. Instructions are obtainable at a nominal charge and Timeworks will answer written technical questions.

Partner seems compatible with most Commodore 64 programs I've tried. If problems do occur with incompatibility, *Partner* can be disabled from the keyboard without removing the cartridge. *Partner* will not work with other cartridge programs or with the 1541 Flash on. No word yet on compatibility with the RAM Expansion Modules.

The well-illustrated manual is unusually clear in explaining the simple commands needed to use *Partner* functions. Most important and least encountered nowadays is the outstanding user support. The people at Timeworks are unusually concerned and helpful with problems.

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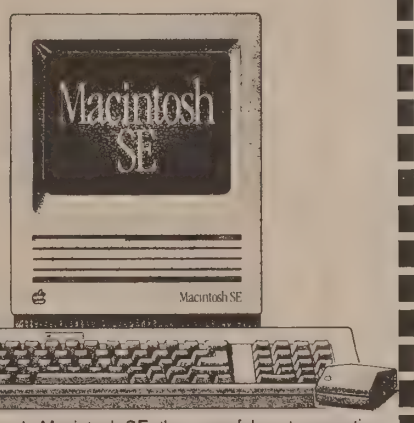

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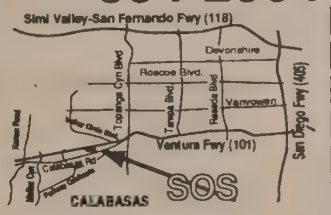

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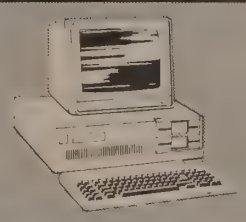

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GRAPHICS

Clip Art Gallery

Created by: *Hilary Mills and Muffy McCosh*
Published by: *Activision (1987)*
For: *Apple IIGS (requires PaintWorks Plus)*
List Price: *$30.*
Reviewed by: *Mike Markowitz*

Until the IIGS came along, graphics for the Apple II were pretty crude. With only a limited selection of colors and moderate screen resolution, the Apple artist had to make every pixel count. Now the picture has changed. *Clip Art Gallery* is a dazzling example of the visual feast that the IIGS offers. Compared with clip art packages designed for the IIe and IIc, the images for the IIGS are more richly detailed, more lifelike, more like what you would expect to see on an Amiga, in fact.

This 3.5" disk contains over 600 images, organized by theme into 26 files.

Clip Art Gallery is designed to work with *Paintworks Plus*, or any other IIGS paint programs that recognize the *Paintworks* picture file formats. At this writing, it is not clear which of several forthcoming programs will fit into this category, but *Deluxe Paint II* definitely does not.

Each file is actually a "page" that contains more than you can see at any one time on the *Paintworks* drawing window. You have to scroll around to select the particular image you want, then "lasso" it or cut it out, and copy it to the clipboard. You can then paste it into your own artwork. Each page of clip art is created with its own palette, so copying it into a picture that uses a different palette can sometimes give bizarre and unexpected results.

The disk is accompanied by a 30 page booklet that provides instructions and hints, along with a sampling of illustrations from each file (a complete "catalog" would have been much more helpful). Nevertheless, *Clip Art Gallery* is a good value for owners of *Paintworks*, at least until public domain collections of IIGS clip art start to appear. (Activision, P.O. Box 7287, Mountain View, CA 94039.)

EDUCATIONAL SOFTWARE

Talking Teacher

By: *Firebird Licensees Inc.*
For: *Commodore 64/128*
List Price: *$29.95*
Reviewed by: *Sue Albert*

If you have heard other computer progams speak and your reaction was "eh?" you are in for a surprise with the *Talking Teacher*. Here is a program that not only speaks clearly and distinctly, but uses speech in a joyful way to teach even very young children their way around the keyboard and the alphabet.

There are three levels to *Talking Teacher*, but they all start out in the same brightly colored schoolroom with a blackboard on the wall. The voice (I call him Mr. Smooth), a disembodied hand, a hundred small animated word subjects, and of course, the alphabet, inhabit this pleasant space at different times.

In the first level, when a letter key is pushed a giant letter appears, Mr. Smooth pronounces the letter, and the hand writes both upper and lower case on the blackboard. Things really liven up in level two where Mr. Smooth asks the player to find the first letter of a word on the keyboard and gives hints to the key's location . . . "Try a little lower," "You're getting warmer." When correctly chosen the letter gets to speed, with its own unique "alpha-gait," out the door into a landscape to find not only the rest of it's word, but a fitting animation. The key is requested again, and when correctly pressed there is a reward of an ever-building melody. If interest wanders, Mr. Smooth invites the player to return to the keyboard. On level three, Mr. Smooth asks for the beginning letter of a word, then presents the animation. Incorrect answers are reviewed and the hand prints the letters, while correct responses receive the music reward.

Talking Teacher is a thoughtful and subtle educational program teaching letter recognition, spatial relationships, and letter/word pronunciation. Each level must be loaded separately so a child can use the whole keyboard without disrupting the program, which will continuously start over.

In the manual there is a brief program description, a few helpful suggestions and a complete word list on the first five pages, with the rest devoted to an alphabet coloring book. A small set of crayons is included. One word of warning. *Talking Teacher* is another program that will not load with a Cardco +G interface plugged into the cassette interface port.

GAMES

Alternate Reality—The Dungeon

Published by: *DataSoft*
Distributed by: *Electronic Arts*
For: *Commodore 64/128 ($39.95), also Atari, Atari ST, Apple II*
Reviewed by: *Sue Albert*

The Dungeon . . Eiiiii . . You should live so long! In this integrated sequel to *Alternative Reality—The City*, your fantasy alter ego is lost in a dungeon that lives up to your lowest expectations. No place here for Mr. Nice Guy. Being friendly to one creature automatically makes you the enemy of others. This motley crew starts on the lowest level with a nasty, aggressive mold and goes downhill from there.

Trust? Hope? Forget it! Even the diseases are sneaky. The world of the dungeon is at war, and you must fight, fight, fight your way through the mixed metaphors of mangled mythologies, using weapons ranging from the utterly fantastic to the latest Kung Fu contraptions. Occasionally there is help, but only at a price. The computer keeps tabs on your gains and penalties and lets you resurrect your character for another try after a "fatal" encounter, giving you a demerit in intelligence each time you decide to return. Is this trying to tell us something?

OK, so I'm bitter! I have no aptitude for fantasy quest games and never "live" very long. The Dungeon, I must admit, may be the most intricate fantasy realization I've seen to date.

I was impressed by the music. The introductory screens are an extravaganza with animation and an original theme song with sing-along lyrics. The detailed, colorful game screens are small and have simple animations with some sound effects and music. The illustrated manual is very thorough. There can be a fair amount of disk swapping using the two "flippy" disks, plus your character disk, without any provisions for dual drives or the 1764 Ram Expansion. You will use the joystick much less than the keyboard. Be prepared for a rather startling,

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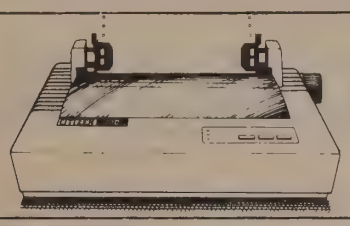

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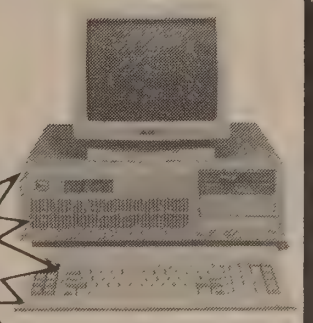

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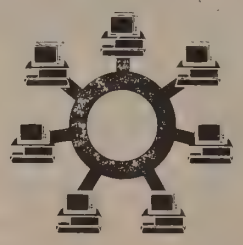

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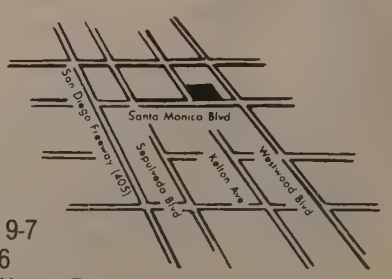

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but harmless disk drive spinning when the disk is removed for a swap.

God forbid *I* should live there, but if you have a penchant for Black Magic, monsters, and medieval guilds, and posses a good sense of direction and quick reflexes, you might want to spend a prolonged and exciting visit in this alternative reality.

Dan Dare, Sanxion and Delta Patrol

By: *Virgin Games Ltd. and Gang of Five, Stavros Fasoulas and Thalamus Software Ltd.*
Distributed by: *Electronic Arts*
For: *Commodore 64 ($19.95 each)*
Reviewed by: *Sue Albert*

Electronic Arts has recently begun to distribute a new "affordable" line of fast-paced arcade style software from other countries under the "Amazing Software" label. These come in simple, colorful sleeves and have minimal but adequate documentation. The games are familiar in their overall style, but offer many levels of play and high quality graphics, animation, sound effects and some unusually good computer music. All can be controlled by either joystick or keyboard.

In *Dan Dare, Pilot of the Future,* an English comic strip hero becomes an interactive adventure game. With Stripey, his bouncy little alien pet, Colonel Dan must rescue two friends from underground caverns on a nuclear-armed, guided asteroid hurtling toward the earth. Combating Treen guards, he must defeat Mekon, the evil alien mastermind, destroy the asteroid and escape in his ship with his comrades to safety. The graphics are comic book style and there is plenty of action, although I found Dan a tad sluggish in a fight. There are lots of objects Dan can use in his search, and of course he is armed with some deadly grenades. You must watch the time and not waste Dan's strength. Messages appear on the screen to warn and instruct you as you search the maze of caverns. This game has a tongue-in-cheek wit and should prove entertaining as well as economical.

The next two games fall into the classic space ship, shoot 'em up school. Stavros Fasoulas has filled the many scenes and levels with gorgeous color and downright classy music in both *Delta Patrol* and *Sanxion*. Although the pace is fast, I did manage to get to the second level on both games after an hour or so of intense play. These games are refreshingly direct. You are challenged by odd vehicles and frustrating space obstacles (like the Freudian, puckering "space donuts" in *Delta Patrol*) that you must blast through in your deepspace patrol of the dangerous and varied no-mans-land of the Delta space sector. With this program the screens are actually more attractive than the sleeve's photo illustration.

As a pilot on *Sanxion* you must cleanse your sector on the planet of all alien invaders, then pass complex training tests for bonus points. After patrolling ten sectors you get a promotion and the privilege of fighting more invaders on the "dark side." Be sure and let the intro screen music play all the way through at least once on this disk.

If your fingers and blood pressure can take it, you will be in for some long hours of fun and surprises with both these games.

Legacy Of The Ancients

By: *Quest Software*
Published by: *Electronic Arts*
For: *Commodore 64/128, (Apple II+, IIc, IIe version due)*
List Price: *$39.95*
Reviewed by: *Sue Albert*

I'm a very busy person with a battered but surviving work ethic, so games have to win *me!*

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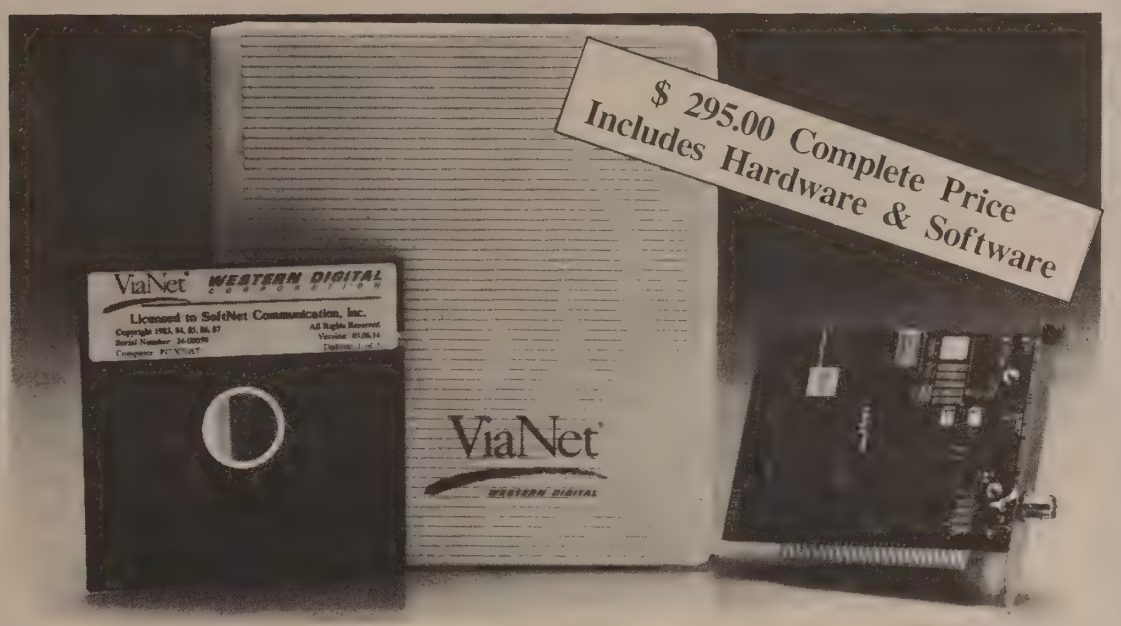

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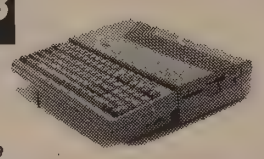

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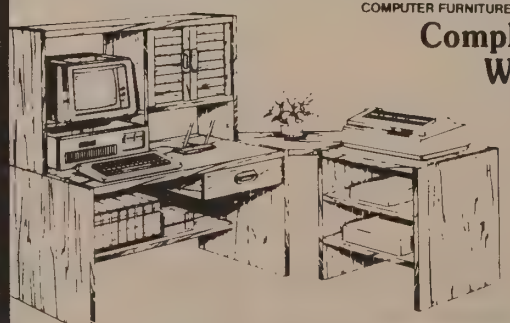

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The winningest games I've encountered lately seem to be coming out of Electronic Arts. Innovative if not always original, their recent games have solid, bug-free operation, now enhanced by fast loading that ends those "EA hypno-nods" acquired from staring at their flickering logo during five-minute loads.

Not only am I a busy person, I am a female person, so quest games have never held much attraction for me. In literature the women in quest classics usually spend their time at weaving, waving hankies at jousters or clutched in the scaly forepaws of hot-breathed monsters. They rarely traveled or had much fun.

Legacy of the Ancients however, has a novel preview mode that gives you a provocative glimpse of the many attractions of the mythical world of Tarmalon. My mind said "You've come a long way baby!" as *Legacy* pandered to my weaknesses: graphics, animation, sound, and humor. This program has graphics so good you might mistake your C64 for an Amiga. After choosing and saving a custom "character" to disk you quickly start the quest in the cavernous maze of The Galactic Museum built by the Ancients of the title. Your footsteps echo as you walk the brick halls past torches that flicker and crackle as you pass. Approaching an arch you hear the static of one of the many TV-like screens that are animated with special jeweled coins to offer you advice, weapons, secrets, gold, and doorways into the outer world.

The outer world is seen and heard from a birds-eye view, and is a very dangerous place where you are constantly approached by 30 different creatures with ulterior motives. Many are spoiling for a fight, but some have useful items to sell and a few are even good to eat. Twelve different towns offer haven for a traveler, with opportunities to increase your wealth and skills. Here you can bank, borrow gold, purchase weapons, magic spells, transportation and supplies, get wounds healed and have your fortune told.

There are several quality games-within-a-game in *Legacy of the Ancients*, like Blackjack, Flip Flop, and Stones of Wisdom. The training schools are also exciting games where improved skills help you to survive journeys to the elegant castle and visits with denizens of the creepy dungeons, both abounding with treasure, magic, and adventure.

Legacy of the Ancients is easy to use with the keyboard and even easier with the joystick. Holding down the joystick button activates a command menu that frees you from typing. The brief manual explains commands and the characteristics of objects and creatures, giving useful hints and clues. The included Access Code Wheel is used when returning to the Museum and makes life more complicated for "realtime" pirates.

I can envision weeks of exciting entertainment with *Legacy of the Ancients;* it'll be a nice change to enter a male myth and start waving a sword instead of a hankie.

Maniac Mansion

By: *Ron Gilbert and Gary Winnick*
Published By: *Lucasfilm (1987) Distributed by: Activision*
For: *Apple IIe, IIc (128K), also Commodore 64/128*
List Price: *$34.95*
Reviewed by: *Mike Markowitz*

Dave's girlfriend, Sandy the Cheerleader, has been abducted by Dr. Fred, a mad scientist who's planning to turn her brain into jello in his fiendish lab in the basement of that creepy old house on top of the hill. You're Dave, and you have to pick two college buddies to help you stage a midnight rescue and uncover the Terrible Secret of Maniac Mansion.

As you might expect from a product of the Lucasfilm game factory, *Maniac Mansion* has

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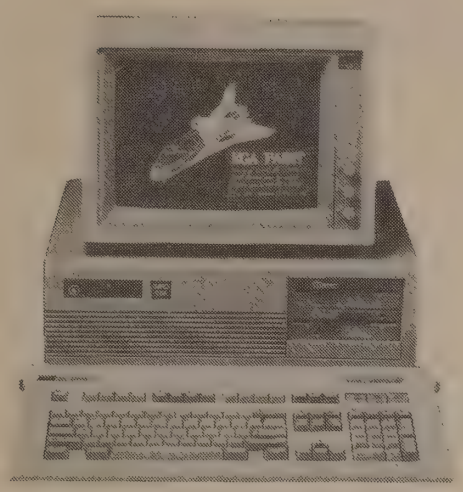

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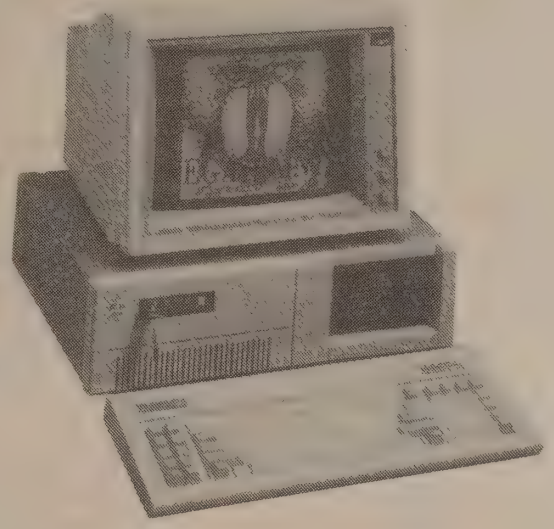

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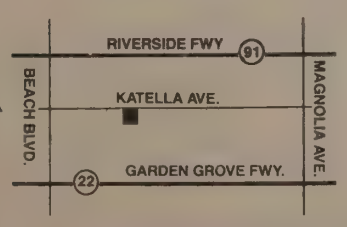

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some of the cleverest animation and special effects ever seen in the world of 8-bit microprocessors. The program manages something that has defeated more than one good programmer: using a joystick effectively as a mouse, to select options, move the players around, and even grope through darkened rooms. When you direct a character to move into an edge of the screen, the scene changes to show the next room, or the next part of your current room.

The game uses a limited vocabulary, with all the words displayed across the bottom of the screen: WALK TO, PUSH, PULL, GIVE, OPEN, CLOSE, READ, PICK UP, WHAT IS, UNLOCK, USE, TURN ON, TURN OFF, FIX. There is also a NEW KID command, used to switch control between your three characters, and an Inventory of the objects you've picked up.

Being moviemakers at heart, the folks at Lucasfilm Games have included "cut scenes"—short animated sequences that are "triggered" when you do certain things. These little flashbacks help to tell the story and give you hints about the game. Some fancy data compression techniques must have been used to get so much information onto a double-sided disk (the game prompts you when it's time to flip the disk over).

The mansion is BIG, with 55 "rooms" and over 450 objects. The puzzles are humorous and challenging, but not so difficult that a beginning adventure gamer would become frustrated (My idea of "too difficult" is getting the Babel fish into your ear aboard the Vogon ship in *Hitchhiker's Guide To The Galaxy* from InfoCom.)

We are assured that there are five possible solutions to the game, so it can be played repeatedly, with different characters, although the objects will always be in the same places. A game in progress can be saved to a DOS 3.3 formatter disk.

Maniac Mansion will run on the Apple IIGS, but you have to set the system speed to the "slow" setting, or else the joystick cursor will be almost impossible to control. My contact at Lucasfilm Games thought the program's colors looked bad on the analog RGB monitor, but when I plugged a composite color monitor into my IIGS, for a side-by-side comparison, there was hardly any detectable difference. It would have been nice if the designers had included a mouse option, but the vast majority of Apple II gamers are still mouseless.

Documentation is a minimal, which is altogether fitting and proper for a game where you are expected to figure things out for yourself. A fold-out poster included in the package recreates a bulletin board from the State University. A lot of hints are hidden among the jokes.

Maniac Mansion is something very rare in the world of computer adventure games—a treasure house of new ideas and programming techniques. In a period when so many games are dull repetitions of standard formulas, written in klutzy compiled BASIC for 48K of RAM, it is refreshing to see something so creative. (Activision, 2350 Bayshore Parkway, Mountain View, CA 94043. 415/960-0410.)

Street Sports Baseball, California Games

By: *EPYX*
For: *Commodore 64/128, IBM, Apple II, California Games also for Amiga and Apple IIGS*
List Price: *$39.95 all versions*
Reviewed by: *Sue Albert*

East is East and West is West in these two new games continuing the EPYX Games Series. These are charmers, not only because of the catchy music, well-articulated animation, and humor, but because even a bumble-finger at the joystick can rapidly catch on and improve enough to dream of winning. Both games acknowledge a universe where females not only exist, but are talented competitors.

Street Sports Baseball has two fields to play on a vacant lot and a parking lot. Both are authentic with can lid and tire bases, stumps, puddles, and car horns honking in the background. You choose teams, toss a coin, and play against a friend or the computer. The players, reminiscent of the street-smart "Dead End Kids," are the 52nd Street Gang, each with unique player attributes. Favorite teams can be saved to disk. The play is realistic, players bend down for the ball and slide into bases. The split screen helps you to get a bead on the ball for batting and fielding. In the Commodore 64/128 version, the manual incorrectly states that before completion of the game you may press run/stop-restore to start over, when actually you must reboot for a new game.

As a second generation native, I found *California Games* especially appealing with its catchy music and recognizable locals. Loved surfing despite the lurking shark, got a kick out of skateboarding the Half Pipe where I could almost feel the skinned elbows, impressed myself by doing snappy foot bag tricks and managed a few wheelies on my BMX bike, but I felt "totally" at home tossing the Frisbee under Half Dome in Yosemite. I enjoyed roller skating the Venice boardwalk, but occasionally I seemed to lose all my momentum. The manual covers the fine points of each sport. Events can be played against the computer or up to eight players can compete, Olympic style. *California Games* is endearing with unexpected humorous details like tempermental losers and even a cute little 'quake.

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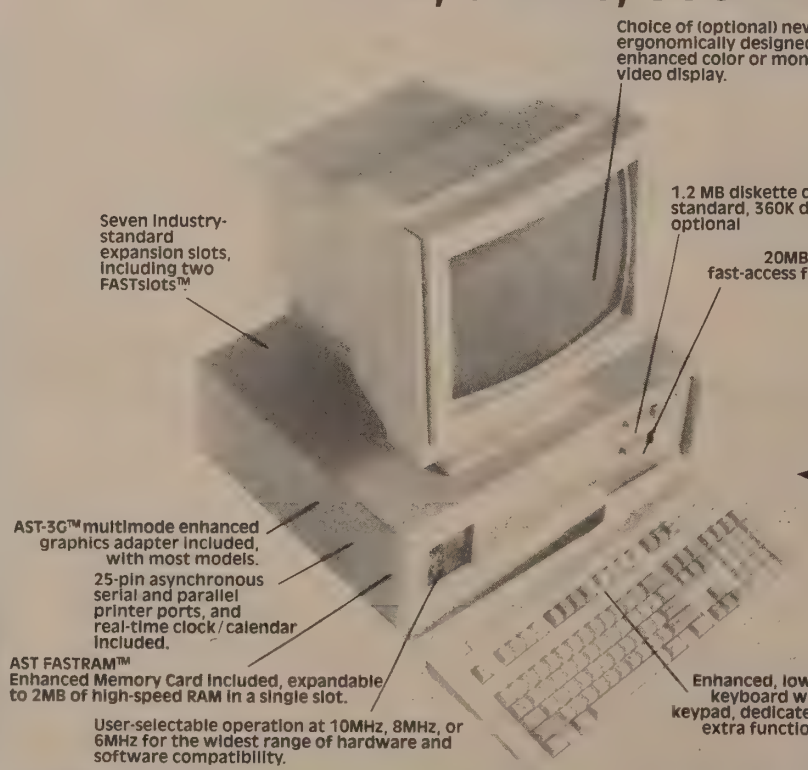
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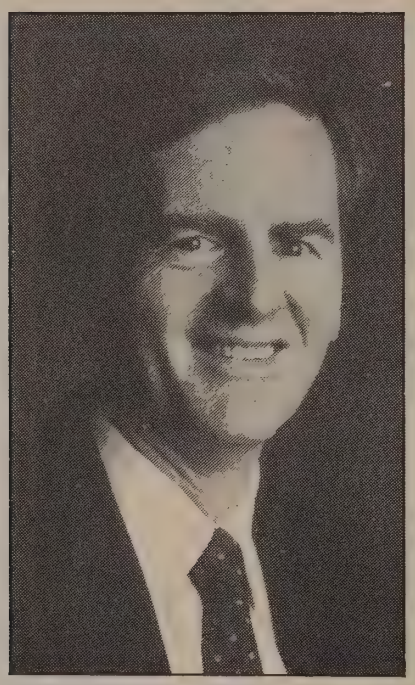

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From the time the first nominations for this year's list of industry leaders started arriving in our mailbox, electronic and otherwise, it was obvious that Microsoft's Bill Gates and Apple's John Sculley were leading the pack. To users and vendors alike, the personal contributions of Gates and Sculley to their companies' continued evolution profoundly affected the industry's direction and prosperity.

In a sense, our two Men of the Year demonstrate that it's possible to succeed in the microcomputer industry with nearly diametrically opposed strategies and philosophies. Microsoft's strength is its software, Apple's its hardware. While both companies show strong commitment to enhancing productivity and power, their approaches are radically different.

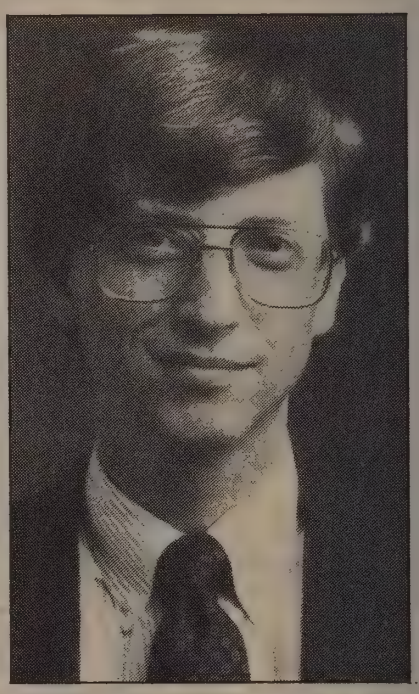
Sculley, who explains his views in this issue's cover story, has steadfastly kept Apple a company of intense in-house development and sophisticated proprietary technology, a company which has resisted considerable pressure to license its technology to vendors of lower-cost machines. One of Apple's great strengths is its ability to infiltrate existing markets and create new ones with inventive technology — consider, for example, the genre of desktop publishing, which propelled Macintosh into the Fortune 500 and, in classic turnpike-effect fashion, brought a whole new market into existence.

At the same time, Apple's launched an aggressive campaign for connectivity, in the realization that its computers will always exist in a world of other machines and operating systems. It pleased its third-party vendors by creating Claris, a soon-to-be-independent company which will market current existing Apple applications and new packages. Third-party vendors weren't so pleased with Sculley's decision to bundle *HyperCard* with all new Macs, on the grounds that it has some application-like qualities, but Sculley insisted on wide distribution of *HyperCard* as a development platform for future hypermedia implementations on Apple machines.

Gates and Microsoft, on the other hand, have long espoused the philosophy of industry standards, open architecture and strategic alliances. The result is a microcomputer industry in which a highly diversified Microsoft has its many eggs in multiple baskets and is positioned to take advantage of future directions.

"Whatever happens, Microsoft wins," *PC World* publisher David Bunnell has remarked on occasion, and with good reason. Already the purveyor of industry-standard MS-DOS, Microsoft is working with IBM on OS/2, the graphics-based operating system for IBM's new PS/2 line. Further, it's allied with AT&T to market UNIX and XENIX multiuser operating systems in the PC environment; its programming languages are perpetual bestsellers; its application packages for PC and Macintosh continue to arrive in newer and more powerful versions, attaining huge popularity in both markets.

Microsoft's long-awaited *Windows* graphical interface operating system for the PC arrived and became the environment of choice for the power user. This fall Microsoft announced *Windows/386*, which brought the *Windows* environment to the 386 machine and, perhaps more importantly, fully exploited the capabilities of the 32-bit 80386. *Windows/386* was launched



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Microsoft
Cofounder and Chairman

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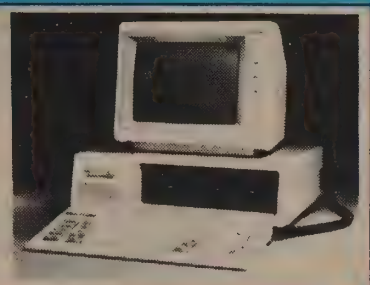

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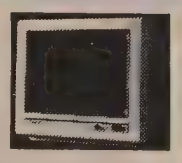

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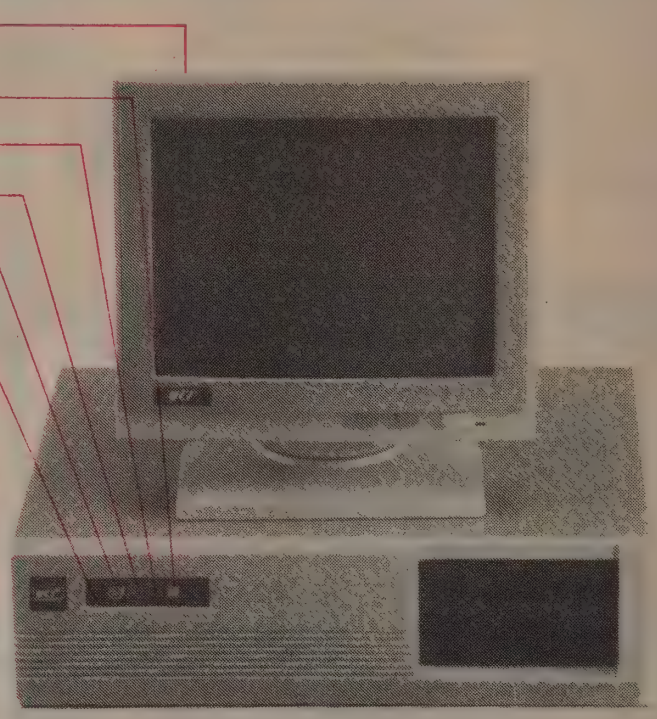

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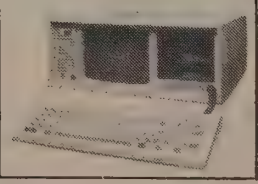

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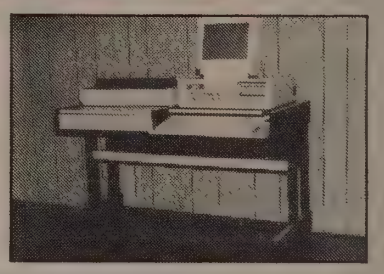

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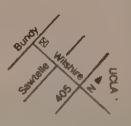

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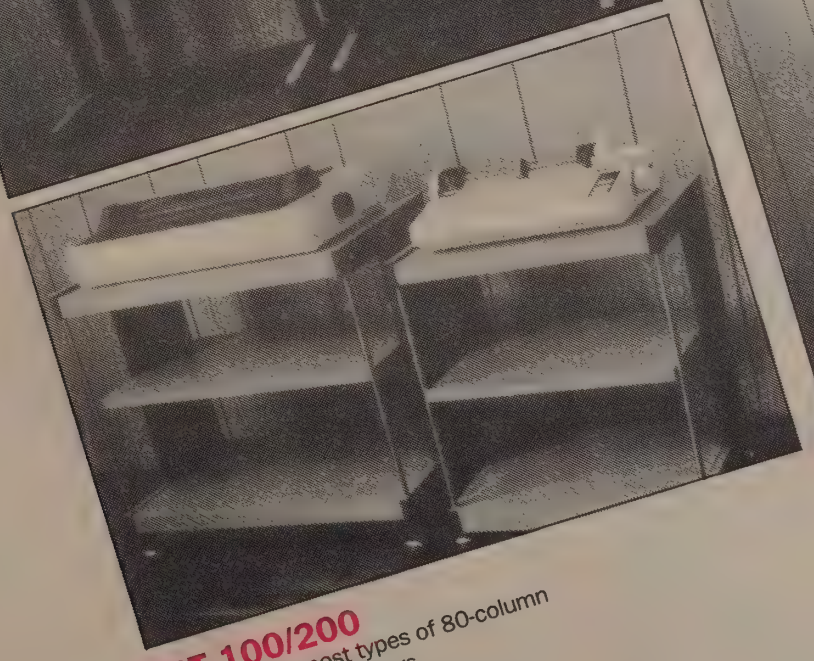

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amid a show of support from hardware vendors, including 386 standard-bearer Compaq and a host of software developers.

Microsoft also remains committed to exploring new possibilities, most notably with its sponsorship of an annual conference on CD-ROM technology and its publication of its own CD-ROM products.

Gates himself certainly ranks among the wealthiest and most powerful leaders in *any* industry, and is actively involved in the operations and strategy of Microsoft. He also manages a fair amount of contact with the users of Microsoft products, making frequent appearances at events from huge conventions to tiny user group meetings, affably presenting slide shows and discussions of Microsoft's strategy for maintaining its diversity and industry dominance well into the next century.

While MS-DOS, OS/2, XENIX/UNIX, *Windows* in all its incarnations, *Word*, *Excel*, *Works* and a myriad of other software products would insure Gates a comfortable position at the top of anybody's list, including ours, we have another reason — a brief exchange at a recent meeting of the Silicon Valley Computer Society, where Gates had brought the Microsoft Traveling Road Show for the evening.

The hall was filled with users and developers who obviously relished the opportunity to grill the chairman of Microsoft, and Gates appeared to enjoy the religious controversy and theoretical debate. Finally one user stood up to complain that the newest release of a Microsoft application, which he'd been using in its various forms for years, no longer included a driver for his printer, which had been a perfectly standard machine back in the days of the IBM PC, nor did it allow the user to write his own driver. Looking positively horror-stricken, the startled Gates said "That's not right..." Pulling out a pen and paper, he took the man's name and the relevant details, and pledged to deal with the problem as soon as he got back to Washington.

Somehow, we like that.

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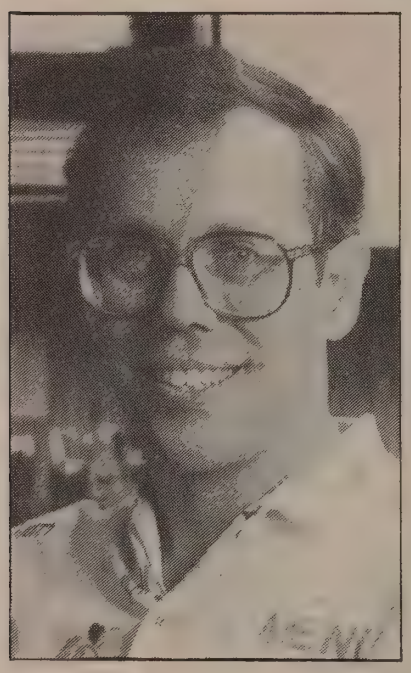


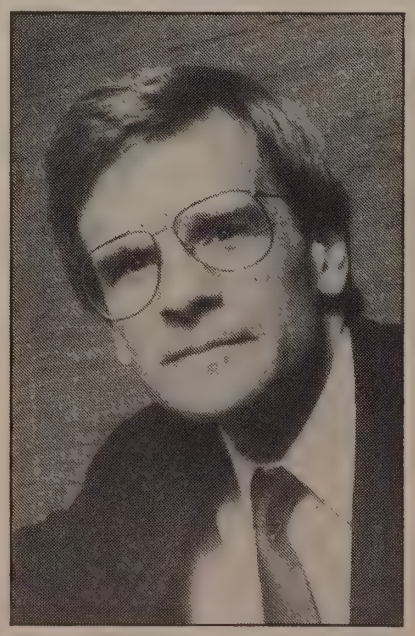
BILL ATKINSON

Apple Computer
Apple Fellow

Some time ago, Bill Atkinson, who was working on *HyperCard* at the time, went to talk with John Sculley. Atkinson, author of *MacPaint*, had been unhappy with Apple's decision to unbundle *MacPaint*, and was concerned lest *HyperCard* meet a similar fate.

As Atkinson continues in Danny Goodman's *Complete HyperCard Handbook*, "He [Sculley] talked it over with the executive staff and let me give a presentation. I said, 'What I want is to bundle it. If you want to bundle it, I'll write it for Apple. You can have the exclusive proprietary rights and all that stuff, but if you don't want to bundle it then it's time for me to graduate from Apple and go on and be an independent developer myself. I'm going to get this out to people whether I give it away or whether I get Apple to give it away.' To this day Apple is not required to bundle it. They only have an option that if they choose to accept it, then they have to bundle it. They could say no to me right now, but at least then its ownership reverts to me so that I can give it away, which I would do. You see, I want it to be given away so that it can be a base for people to share."

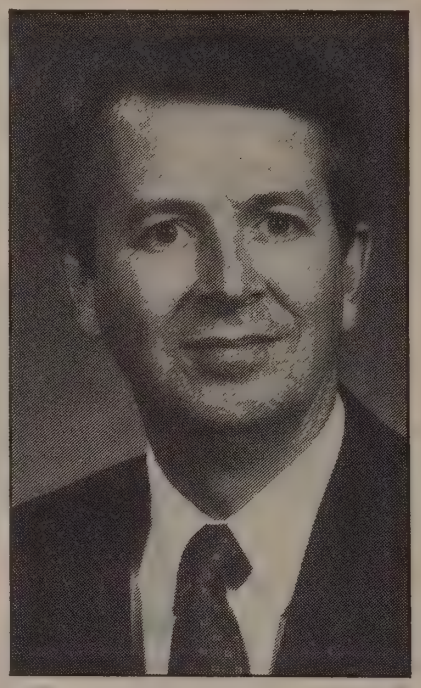
The story speaks for itself. We think both the product and Atkinson's outlook are highly commendable.



PAUL BRAINERD

Aldus
President and CEO

In 1988 as in years past, Aldus maintained its leadership position in the desktop publishing arena, releasing the best-selling *PageMaker* in an improved Macintosh version and a version for the IBM-PC, as well as several ancillary products to assist users with DTP techniques. Its president, Paul Brainerd, who coined the term desktop publishing, continued to demonstrate outstanding leadership in steering the company in ways that drove continuing growth of a substantial new market.



ROD CANION

Compaq
President and CEO

This time last year, it was a matter of speculation whether Compaq had made a brilliant move or committed a serious blunder in releasing its 80386-based computer without waiting for IBM to announce its own 386 and define a standard.

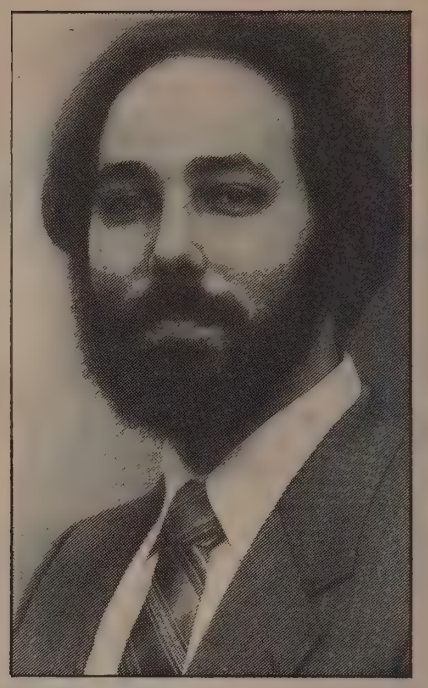
As things have turned out, IBM eventually announced something completely different, a highly-proprietary line of Personal System/2 machines that encompassed a line of machines ranging from 8-bit 8086s to 32-bit 80386s. While third-party vendors tried to figure out how to clone PS/2 technology and design PS/2 peripherals, Compaq defined a new standard with its 386 technology, culminating in its adoption of *Windows/386* as its operating system of choice.

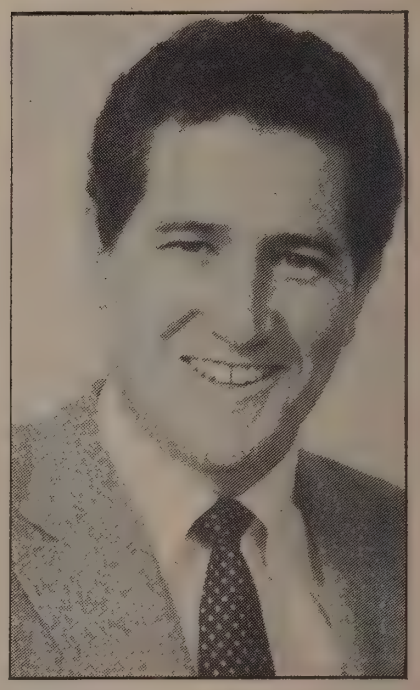
Compaq's prosperity this year seems to bear out the notion that releasing its 386 early was a brilliant notion, as does the growth that 386 machines in general have spurred in the industry as a whole.

NEIL COLVIN

Phoenix Technologies
Chairman and CEO

Ever since the advent of the IBM PC, Phoenix's BIOS code for Intel chips have constituted an industry standard. This year, Phoenix maintained its position of leadership with its BIOS for the 80386 CPU and the 80387 coprocessor, as machines based on these new chips and their vastly improved capabilities caused a burst of innovation and prosperity for both hardware and software vendors, and brought new tools to power-users worldwide.





BRIAN DOUGHERTY

Berkeley Softworks
Founder and CEO

Brian Dougherty's ceaseless quest to bring immortality to the Commodore 64 reached new heights this year with a GEOS-based desktop publishing package for the 64. His company, Berkeley Softworks, publishes the revolutionary GEOS windowing operating system for the 64, as well as a host of GEOS-based applications.

For having the vision and persistence to extend the perennial 64's capabilities — and its users' productivity — far beyond anything its designers could have expected, *MicroTimes* salutes Dougherty and his company.

PHILIPPE KAHN

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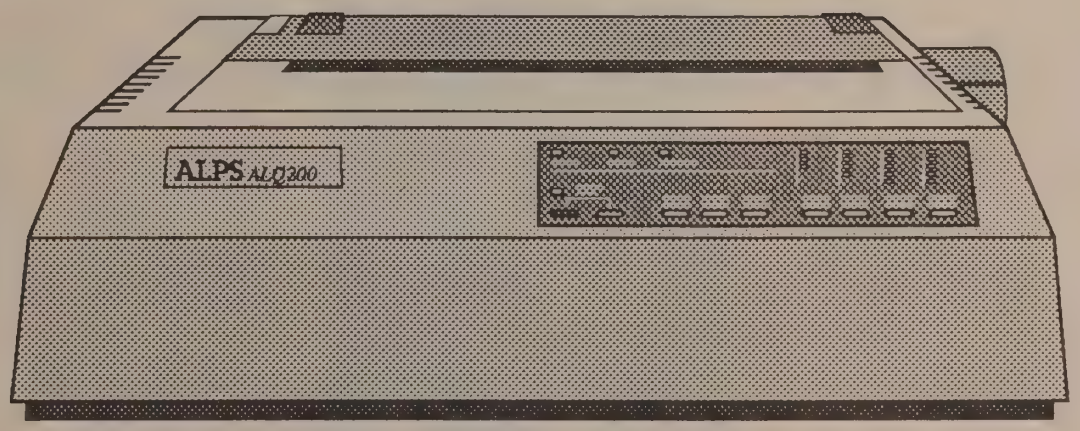

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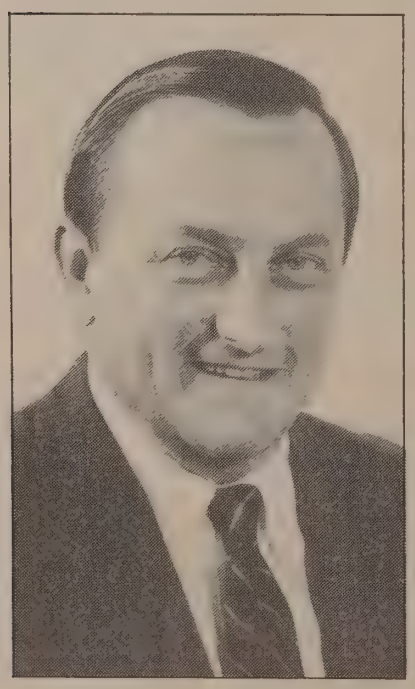
guide Borland to new frontiers. This year, for instance, his company began to address the Macintosh marketplace as well as its traditional PC-based clientele.

Most significant, however, Borland made a dramatic entry into the world of corporate business by acquiring Ansa Software and its highly-regarded database *Paradox*. Plans have been announced to release versions for several new operating systems — with identical user interfaces to minimize training costs for clients.

At nearly the same time, Borland also announced *Quattro*, a state-of-the-art spreadsheet package with speed, power, ease of use, and user interfaces that can be customized to the individual user's preference. Quattro, as Kahn points out, is what comes after 1-2-3. And Kahn promises that Borland will be able to do business with the Fortune 500 without themselves turning into corporate expletive-deleteds.

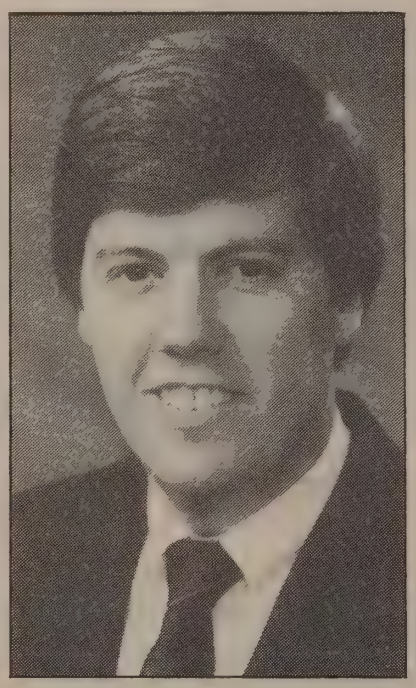


WILLIAM LOWE

IBM
IBM Vice President, President Entry Level Systems

Under Lowe's leadership, IBM's Entry Level Systems Division made a number of aggressive moves to consolidate its position in the corporate market and break into new areas. It launched the revolutionary (especially by Big Blue's customary standards of conservative excellence) PS/2 line, which covered a range of 8- to 32-bit Intel-based machines. (With highly un-IBMish candor, Lowe pointed out at the product unveiling that the 386-based Model 80 offered the power of one of IBM's mainframes at a fraction of the cost.) The new machines all sport a vastly improved graphical interface, sophisticated connectivity with other IBM systems, and a considerable amount of proprietary technology that IBM hopes will deter the clone vendors who eroded the IBM PC's market share in the past. So far IBM's reporting brisk sales.

The PS/2 announcement was later followed by the announcement of yet another model, Model 25, a low-end machine designed especially for the educational market. With the Model 25 and educational packages like the critically acclaimed *Writing To Read* series, IBM is launching an aggressive challenge to Apple in the area of Apple's greatest historic strength.



SCOTT MCNEALY

Sun Microsystems
Chairman of the Board, President, CEO

Since its beginning in 1982, Sun has never failed to show phenomenal growth. In fiscal 1987 it reported earnings of $537 million, $327 million more than last year; it also spent $70 million of that on research and development.

Sun, which makes UNIX-based high-performance workstations, has historically advocated open architecture and adherence to industry standards as a platform for development. This year, under McNealy's leadership, the company made its first overtures to the microcomputer world, acquiring Berkeley-based Centram Systems West and its TOPS networking technology, which allows transparent access between DOS, Macintosh, and UNIX computers, as part of its connectivity strategy. This year Sun also dropped the price on its 3/50 80286-based workstation to $4995, thereby positioning it as an attractive alternative to the Compaq 386 and the Mac II in the workstation marketplace.

THERESA MYERS

Quarterdeck
President

When Microsoft *Windows* was winning acclaim as perennial vaporware, Quarterdeck released a windowing environment for the PC called *DESQview*. It allowed multitasking with existing software running in its native state, each application in its own window. Since then Quarterdeck's continued to enhance and refine its product to support the improved capabilities of the 386 while not leaving users of older, less powerful PCs in the dust.

In the opinion of its many extremely loyal users, Quarterdeck's maintained an impressive track record for delivering functional product while Microsoft talked. Now that *Windows* is available, many loyal *DESQview* users would rather fight than switch. We salute Myers and Quarterdeck for continued product excellence and support of the user community.

JACK TRAMIEL

Atari
CEO

Analysts are scratching their heads over Jack Tramiel's acquisition of the Federated consumer electronics retail chain, a move which may provide Atari with an unprecedented-in-the-US channel for marketing its computers to mass-market customers and may turn out to be something entirely different. Though it's hard to assess the ultimate impact of this move, its scale alone insures that it will have industry-wide ramifications. The Federated acquisition served as just another reminder that

although Tramiel has turned over the company presidency and its daily operations to his son Sam, he remains actively involved and a strong influence on its future development.

This year Atari also announced its own PC clone, about which little has been heard since, its Mega computers, more powerful versions of its popular ST line aimed at the business user, and a 10-MIPS machine, the Abaq computer, which uses either the ST or the Mega as a front end for a high-powered workstation. Meanwhile, the ST line continued to attract a growing user base and a respectable complement of software and add-ons.

Betting against Tramiel has usually been a losing proposition, so we watch these developments with interest, even though the exact nature of their impact is yet to be determined.

DISTINGUISHED ACHIEVEMENT

SHELDON ADELSON

Interface Group
Chairman of the Board

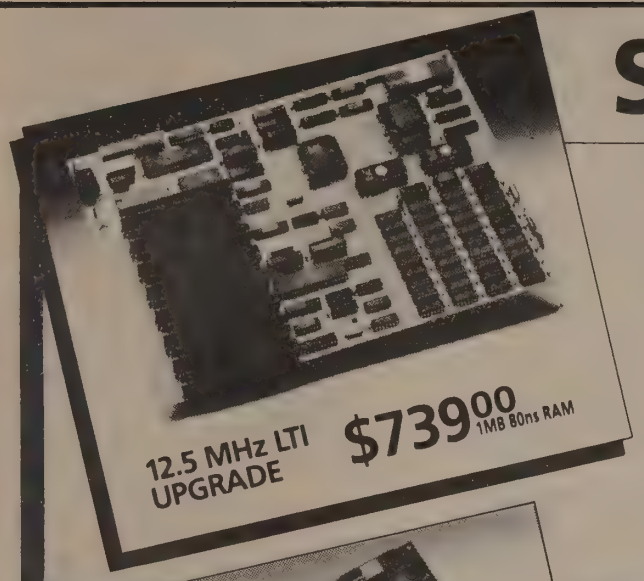
Since Adelson's Interface Group acquired the Computer Faire, the show has shown a marked return to its roots as a user-oriented show. Under Adelson's direction, the Faire is the biggest and arguably the user-friendliest of the shows, making a concerted effort to offer a wide spectrum of conferences and seminars and an exhibitor list that runs the gamut from mega-corporations to user groups.

VICTOR ALHADEFF

Egghead Software
President

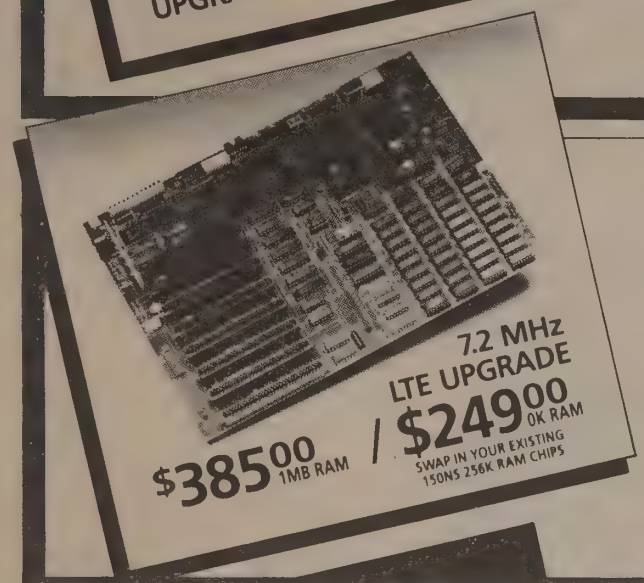
When Alhadeff started the Egghead Discount Software, he broke with traditional software retailing practice and faced opposition from some vendors who feared loss of prestige for their products. Nowadays a successful string of Egghead outlets are living proof that discount prices and excellent support and service don't need to be mutually exclusive.

SPECIAL LIMITED OFFER



"The LTI Motherboard is Devastating."

"If you were thinking about buying a machine to replace your PC, you might want to pull out your motherboard and put in this mover and shaker. I have a 10 MHz AT clone that is damn fast, but after playing with the CTXT, my machine seemed like a slug! The sheer processing power available with the LTI motherboard is devastating. This machine is addictive!"
— Richard Katz, reviewer for **CNTRL-ALT-DEL** (Newsletter of the UCLA PC User's Group, June '87).



"Very Impressive Technical Achievements"

"Overall, the units are very impressive technical achievements that have pushed the limits of XT architecture further than any product we've seen. Once installed, one's existing investment in expansion hardware is preserved and significantly enhanced. The LT-286 boards have a number of built-in features that help maximize the performance of existing XT-type peripheral hardware."
— **PC WEEK Magazine** (July 8, 1986).

"3 Times Faster Than The PC-AT"

"The LTI is the best performing AT-compatible I've seen...the LTI is about three times faster than the PC-AT...the LTI has a Norton Utilities SI rating of 15.3, which is about as high as Compaq's highly touted Deskpro 386! I seriously doubt you'll find an 80286 machine that will outperform the LTI." — CompuServe's **ONLINE TODAY**, August '87.

LTI 30MB SYSTEM (at left) Includes: Seagate ST-238 w/Omti RLL Controller, 360K Floppy Drive, Serial/Parallel/Clock/Game Port, 14" Mono Monitor with Graphics Adapter, MaxiSwitch Keybd., 12.5 MHz 0-Wait-State 1 MB 80ns RAM 80286-Based LTI Motherboard. ***FCC CLASS A COMPLIANT** for Non-Residential Operation. 2nd Floppy Optional.

CTXT's line of **zero-wait-state** 80286 motherboards turn your PC or XT into a true computing powerhouse with **no loss in software or hardware compatibility**. From the powerful but inexpensive 7.2 MHz LTE motherboard to the no-holds-barred state-of-the-art 12.5 MHz LTI motherboard, all CTXT upgrade products offer an added bonus: built-in hard-disc caching for improving hard disk performance by 400%. Don't be fooled by inferior "AT upgrades." Choose the company whose technical innovation and superior engineering is nationally recognized: CTXT Systems, Inc.

CTXT Systems has gained critical acclaim for its LTP-7 Portable Computer, the world's ultimate portable. Fabricated from pure titanium in a patent-pending original design, the LTP-7 is much faster than Compaq's Portable III, has a 14" diagonal, Hercules-compatible gas plasma screen, accepts seven full-length cards, offers a full-size MaxiSwitch keyboard, 40MB hard disk, 3½" and 5¼ floppy drives, measures 8"x17"x15" and weighs only 26 pounds. Targeted for both military and commercial applications, the LTP-7 unit bears witness to the high calibre of CTXT's computer engineering, setting CTXT light years apart from the "competition."

Upgrade motherboards: 2-year warranty, parts and labor. Commercial systems: 2-year warranty on motherboard, 1-year on all ancillary components. **30-Day Money Back Guarantee**. Take advantage of this special limited regional manufacturer-direct promotion before CTXT resumes normal dealer-channel distribution.

CTXT Systems, Inc.

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ALAN ASHTON

Word Perfect
President

WordPerfect has long been a popular word processor in the IBM world. This year WordPerfect broadened its horizons considerably, bringing versions of its successful product to software-starved machines like the ST and Amiga as well as to the Macintosh.

LEO BERENGUEL

Peripheral Land
President

A pioneer in the area of SCSI-based storage devices for the Macintosh, Berenguel has guided Peripheral Land to its current success. This year Peripheral Land offered both high-capacity hard disk/tape backup systems and a revolutionary high-density floppy storage device, keeping up with the growing storage and power requirements of Mac users.

MIKE BOICH

Radius
President

With a variety of products from accelerator boards to full-page display monitors, Radius has remained at the leading edge of Macintosh technology.

ALAN M. BOYD

Owl Software
President

Owl's *Guide* hypertext application served as the basis of the context-sensitive help system in *PageMaker* and the platform for a sophisticated auto-repair tutorial for Ford. Boyd's sense of betrayal over Apple's decision to bundle *HyperCard*, and his subsequent decision to move Guide from the Macintosh world to the PC world, are expected to have the effect of bringing hypermedia applications to the Intel world sooner than anyone really expected.

DAVID BUNNELL

PCW
Chairman PCW Communications

Founder of many ground-breaking computer publications, Bunnell unveiled two more this year: *Windows*, scheduled to start publication next year and support the 386-based graphical workstation market, and *Macintosh Today*, for corporate power-users of Macintosh. He's also continued to speak out on issues that concern him, and never lost sight of the fact that the microcomputer industry is part of a larger society.

GORDON CAMPBELL

Chips and Technologies
President

Although it's still under development, Chips and Technologies' announced PS/2 clone chip set is attracting industry-wide attention. Not only will it serve as an early test of the clone-ability of PS/2 and the performance of the clones, it will undoubtedly have much to do with determining the legal viability of PS/2 clones under the legal might and intense scrutiny of IBM.

MARC CANTER

President
MacroMind

Notably with its latest release, *VideoWorks*, MacroMind continued to bring better tools and and a fair amount of entertainment to the Macintosh user. We await future developments with interest.

DOUGLAS CARLSTON

President and CEO

GARY CARLSTON

Chairman of the Board

CATHY CARLSTON

VP Educational Marketing
Brøderbund Software

For their close personal involvement in their company's development of excellent educational and entertainment software; for its expansion into the business world with a groundbreaking product *ForComment*; for its extensive support of Computer Learning Month, and also for the hordes of saucer-eyed schoolchildren entranced with the quest for the elusive Carmen Sandiego, we salute the Carlstons.

FRANK CAULFIELD

Kleiner Perkins Caulfield & Byers
Venture Capitalist

Caulfield, along with Lotus and Vinod Kholsa, the cofounder of Sun Microsystems, is funding what's arguably the startup of the year. G.O. Corporation brings together Lotus founder Mitch Kapor, Former Ashton-Tate chief scientist Robert Carr, and erstwhile Lotus principal technologist Jerrold Kaplan in a closely-guarded enterprise that transcends conventional applications and ventures into the world of artificial intelligence. We await developments with interest.

DENNIS CHANG

Jasmine
President

Finding the window on the PC-clone marketplace slamming shut, Chang changed his fledgling company's direction to Macintosh SCSI devices early last year. His company's low overhead and market-driven product designs have brought Jasmine massive growth and considerable industry prestige in its relatively short life.

DEBORAH COLEMAN

Apple Computer
Chief Financial Officer

Praised by her boss John Sculley and featured on the cover of *Ms.* Magazine, Coleman rose to her current position after successfully optimizing operations in Apple's production facilities. Combining a sense of Apple's vision with a practical sense of business realities, she hopes someday to be the CEO of General Electric.

CHRIS CRAWFORD

Programmer

Balance of Power's author continues to steer his own occasionally-controversial course, rejecting alien-zapping and hack-slash games in favor of those that stress strategy and personal and political interdependency. His latest, *Trust And Betrayal, The Legacy of Siboot*, combines qualities of D&D adventure with psychological subtlety.

CLIFF CUMMINGS

Telenet, PC Pursuit
Product Manager

Cummings had the inspired notion of using Telenet's packet-switched telecommunications lines, a mainstay of business by day and idle by night, for low-cost off-peak telecommunications by individuals. The result — PC Pursuit, all the off-peak modeming you can use for a flat $25 a month.

ORGANIZATIONS

In addition to nominations of distinguished individuals, we received suggestions concerning organizations whose contributions to the industry were significant and not attributable to a single individual. Among these outstanding groups:

BERKELEY MACINTOSH USER GROUP

or BMUG moved to a brand new office building in downtown Berkeley attesting not only to its popularity but also its financial success. Its prosperity has extended to its successful offshoot company Farrallon Computing, which markets a low-cost LAN originally known as BMUG-net. With thousands of members and huge weekly gatherings that rival old time revival meetings for their aura of good feeling and general enthusiasm, BMUG is what every user group dreams of becoming.

THE SOFTWARE ENTREPRENEUR'S FORUM

was founded in 1983 to provide software entrepreneurs with the resources needed to compete with larger more established companies. Monthly meetings and special interest groups accompanied by one day seminars give the small software business person the chance to learn from the more experienced people in the industry.

Based in Palo Alto, SEF has brought to its members the advice and wisdom of such people as Phillipe Kahn, Jean-Louis Gassee, Andy Hertzfeld and George Morrow. Its successful alumni include Michael Lunsford, founder of MacroPac International and Bill Ray, founder of Apian Software.

SEF recognizes that it takes more than good programming skills to make it in the highly competitive software marketplace and therefore does its best to pass on the vital marketing and business knowledge necessary to run a successful software company. SEF not only benefits the programmer starting out in business but also the entire industry.

COMPUTER LEARNING MONTH

This October saw the coming together of all segments of the microcomputer industry to promote an investment in the future. Computer Learning Month was a great success by all standards. Efforts were made by both Apple and IBM, software manufacturers and the computer press along with teachers, parents and children all across the country to focus attention on the computer in the classroom. Seminars were held, speeches made and articles written in order to better understand the role of the computer in the educational process. The efforts went beyond enlightened self-interest to actual concern and pride in opening up possibilities for today's children.

THE WHOLE EARTH 'LECTRONIC LINK (THE WELL),

its management and its users. The woods are full of conferencing systems competing for the modemer's dollar. We've found that we can't get along without this one — many of our stories are suggested and written by WELL users, we maintain a conference on the system for reader feedback, and we find in-depth discussion on every conceivable industry-related subject.

All that aside, the WELL is fun. At any hour of day or night, you can find a conversation among some of the most interesting people in the Bay Area (and elsewhere) on a subject of interest to you, whether it's science fiction, spirituality, parenting, programming, or the Grateful Dead. As somebody once said in another context entirely, it's part of a lot of interesting lives.

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FRED DAVIS

A+ Magazine
Editor in Chief

A+ has been a valued resource for Apple users for years. Under Davis' direction, it provides reliable product information and trustworthy advice for its readers.

MICHAEL DELL

PCs Limited/Dell Computer
CEO and Chairman of the Board

Having already enjoyed overwhelming success with his line of PC, XT, and AT clones, Dell lost little time in moving into the 386 arena this year. His company continues to prosper, providing low-cost power to thousands of users.

JOHN DVORAK

Columnist

Irreverent, sometimes irascible, Dvorak continues to annoy the purveyors of substandard products, poke fun at sacred cows, and endear himself to thousands of readers who appreciate his candid advice and off-the-wall humor.

STEVE EDELMAN

SuperMac
VP of Advanced Product Development

With products ranging from storage devices to memory enhancements to dazzling color monitors for the Mac II, SuperMac remains one of the leading vendors of Macintosh enhancement products. Under founder Edelman's leadership, the company continues to expand and innovate.

MARTIN ENGEL

Apple
Project Manager For ACOT

With Engel's direction, the Apple Classroom of Tomorrow program has proved a practical way to demonstrate the impact of strategically-used computers in an educational setting. The two-year-old program reflects not only improved test scores and behavior patterns among its students, but also has demonstrated that when students have access to the same tools, ethnic, gender and socio-economic differences have no bearing on performance.

ED ESBER

Ashton-Tate
Chairman of the Board

Esber is steering the company through difficult times as it expands into the Macintosh market and tries to maintain its position as an industry leader. This has been a turbulent year for Ashton-Tate. On the plus side, *dBASE Mac* finally shipped. Yet to be determined is the long-range impact of several significant lawsuits, current and potential, in which the company is fighting for what it considers proprietary technology, most noticeably with Migent.

GORDON EUBANKS

Symantec
President, CEO

Under Eubanks' aegis, Symantec, previously best known for its *Q&A* database, has embarked on a veritable flurry of acquisitions and positioned itself as a major software vendor in the industry, with an eye to connectivity between working environments. Currently among Symantec's holding: Living Videotext, Turner Hall Publishing, Breakthrough Software and Think Technologies.

TIM FARRIS

Boca Research
President

Since founding Boca Research in 1985, Farris has been providing high quality add on boards at a low price. His innovations include the first standardized EGA board and the first memory board that was able to operate at CPU speeds as high as 24 MHz.

MARK FLANAGAN

General Computer
VP Marketing, Sales, and Service

General Computer won early fame as the vendor of HyperDrive, one of the first hard disks for the Mac. Today Flanagan's company continues to provide power and innovation for the Mac marketplace with everything from drives to laser printers.

DAVID, JOHN, AND RANDY FRY

Founders

KATHRYN KOLDER

Fry's
Director of Computer Operations

Fry's Electronics has become one of the most popular stops for tourists in Silicon Valley — a supermarket for the computer shopper. *MicroTimes* commends the Fry Brothers and Ms. Kolder for making an innovative marketing concept a successful business.

JEAN-LOUIS GASSEE

Apple Computer
Senior Vice President of Research and Development

Something of a Renaissance man of the computer world, Gassee heads one of the most innovative R&D departments in the industry, while continuing to be one of Apple's most engaging spokesmen. His book, *The Third Apple*, is an entrancing, compelling account of some of the possibilities he sees looming on our culture's horizons as a result of the Apple that came after Eve's and Newton's.

CHARLES GESCHKE

Adobe
Executive VP

Thanks to the leadership of its founders, Adobe has continued to grow, prosper, and innovate. This year it attained a strong presence, diversifying from a company chiefly engaged in selling PostScript code to printer OEMs and finding a warm reception for its software from fonts to the revolutionary *Adobe Illustrator*.

RICK GIBSON

The Consortium, Inc.
President

In The Consortium, Gibson created a powerful, effective alliance of third-party vendors of products supporting *Lotus 1-2-3*. Not to rest on his laurels, he's recently announced a new version, one oriented around *dBASE*.

NAT GOLDHABER

Centram Systems West
President

Impelled by the vision of "connecting everything to everything else," Goldhaber and Centram developed the revolutionary TOPS network system, allowing transparent access among UNIX, DOS and Macintosh machines on distributed networks. The concept and the product were sufficiently impressive that Centram found itself besieged with suitors and was acquired by Sun Microsystems.

CARL GRITZMAKER

Migent
CEO, President

Time will tell the victor in the ongoing litigation between Ashton-Tate and Migent, which consists of a great number of A-T alumni, over who owns what code. Meanwhile, Gritzmaker's company enjoys respectable prosperity selling business software and Pocket Modems, while its long-promised revolutionary database, code-named *Emerald Bay*, waits in the wings.

SIG HARTMAN

Atari
VP of Software

Hartman's in charge of inducing software vendors to create products

ON THE HORIZON

Those in the know always keep a lookout on the horizon to make sure they're not caught off-guard in the never-ending market wars that characterize the micro computer industry. Here are several people *MicroTimes* feels you should keep an eye on.

MAX TOY, *President of Commodore Business Machines.*

Max Toy is a recent arrival at Commodore, having been lured from XTRA, ne ITT Information Systems. At XTRA he was responsible for greatly enhancing the efficiency and responsiveness of the company's marketing channel and producing impressive increases in sales, and it's hoped that he will produce similar wizardry at Commodore, a company that's always made good machines and never quite acquired the right touch in marketing them.

STEPHEN BECK, *Beck-Tech.*

Stephen Beck has long been a familiar face in the area of computer animation and as a pioneer of desktop video. One of his best feats was getting a Macintosh to produce color animation long before the Mac II came into existence. Beck says that in the next few years we'll see actual editing of videotape on a Mac, thereby drastically reducing equipment costs, possibly doing for video what MIDI did for music.

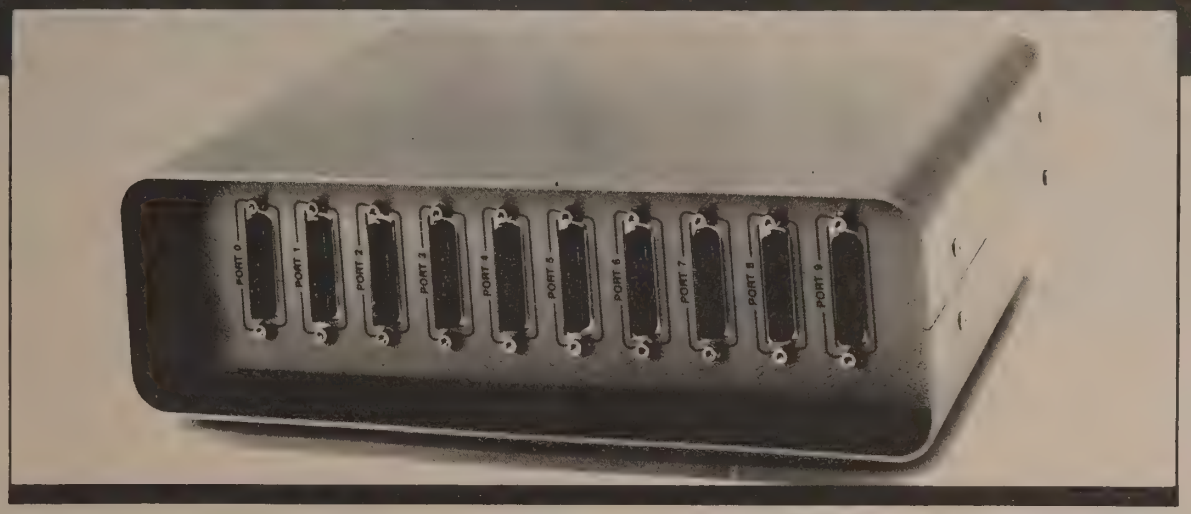
PHIL SIH and JOHN LITTLE, *Portal Communications Company.*

When Phil Sih and John Little decided to create The Portal System, an online communications service, they decided to get it right the first time. Using an expandable modular construction, offering high speed at a low price and a transparent gateway to over 5,000 computer sites on four continents they have created somthing more than just a conferencing system, bulletin board or e-mail service. In their words its an "electronic reflection" of the community. Soon to arrive — a version of Ted Nelson's Xanadu hypertext system online for Portal users.

STEVE WOZNIAK, *CL9.*

It's easy to see that "The Woz" is enjoying life. He's making speaking engagements, organizing rock concerts in Moscow and even appearing as a guest disk jockey. While his newest toy the "Control everything" remote control, may not be shaking any foundations, his influence on the hearts and minds of young computer enthusiasts is great. A mind as creative as this is never idle and bound to soon produce something we'll all gaze at in wonder.

PC PORT CONTROLLER



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for Atari computers. This year saw his efforts coming to fruition in a new crop of software for the ST, allowing the machine to become a more serious contender in the business as well as the consumer/entertainment world.

TRIP HAWKINS

Electronic Arts
President

Once again, Hawkins led his company through a year of outstanding software releases — an improved version of *Deluxe Paint* for the Amiga and a version of the same package for the IIGS among them. EA also delighted hordes of PC users with the release of the DOS version of *The Bard's Tale*. Even though, in a momentary lapse of taste, the company also saw fit to release *Leisure Suit Larry In The Land Of The Lounge Lizards*, we still think Hawkins' achievements merit recognition.

ANDY HERTZFELD

Programmer

Andy Hertzfeld is one of the original Macintosh wizards, and influences the industry's expansion into new frontiers by continuing to explore and innovate. *Servant*, his alternative Mac environment, attained wide distribution this year, and has attracted many devoted users.

STEVE HUIE

Everex
President

Huie's led Everex to a prominent stature as a leading OEM of IBM-clone technology. From PC to 386, Everex offers vendors quality engineering and impressive performance, and is beginning to move into the PS/2 arena, thereby helping to create a thriving marketplace in the Intel-based arena.

DAVE HUGHES

Chariot Conferencing

One of the pioneers of electronic democracy, Hughes is relentlessly dedicated to heralding the Information Age as a proper setting for computer-based populism. If the gap widens between the information-rich and the information-poor, it won't be his fault.

KAZUO ISHIGURO

Toshiba
President of the Industrial Electronics Business Sector of Toshiba America

Given the task of turning Toshiba America into a prosperous American company, Ishiguro was well on his way when he encountered an unexpected road hazard — the Toshiba Machine scandal and subsequent trade sanctions which made it impossible to sell some of the company's most popular laptop computers in the US. Nonetheless, Toshiba's made a remarkable recovery, introducing the high-end 3100 and the 8-bit T1000 laptops to rave reviews and brisk sales.

BILL JOY

Sun Microsystems
VP of Research and Development

A renowned UNIX guru and author of the *vi* text editor, Joy leads Sun in the development of "real computers based on microprocessors." His vision of open architecture, industry standards and cooperation with outside vendors has led Sun to technical excellence and prosperity.

MITCH KAPOR

G.O. Corporation
Member of the Board of Directors

We await Kapor's activities at G.O. with interest, but that's not why he's on this year's list. Nor is he on this year's list because he's a co-founder of Lotus. No, he's on the list because, as Philippe Kahn reports, he felt personally responsible for his product *1-2-3* and didn't want to be a party to Lotus' look-and-feel lawsuits, and we think this is a commendable attitude.

GUY KAWASAKI

Acius
President

It's not every software company president who views every difficulty a user has with his product as his own personal problem, but that's how it is with Kawasaki — one user reports getting a phone call from Kawasaki, vacationing in Hawaii, trying to deal with a bug he'd reported. If Acius' *4th Dimension* doesn't become the database of choice in the Macintosh world, it won't be because Apple's ex-software evangelist didn't try hard enough.

DAVID KAY

Kaypro
President

Not long ago, it was questionable that Kaypro would survive the transition from the CP/M to the DOS world. The deathwatch was called off long ago, and Kay's company is doing very nicely, thank you, with sophisticated 286- and 386-based desktop machines and an innovative laptop or two. Expect Kaypro to be a key player into the indefinite future.

L. WILLIAM KRAUSE

3COM
Chairman and CEO

As networking became an even more vital issue this year, Krause's company continued to develop more sophisticated technology and effective solutions for the corporate world, and to expand its range of supported systems.

NED LAUTENBACH

IBM
IBM Vice President, President, National Distribution Division

Lautenbach is generally credited with revitalizing IBM's trouble-ridden dealer channel, streamlining operations, clarifying policies and greatly improving morale in the process.

JAN LEWIS

Columnist

Lewis brings an unconventional perspective to the industry that's both striking and insightful. Her syndicated column, But Jan Lewis Says..., offers readers nationwide a fresh viewpoint on computer-related issues.

DAVID LOESE

Ziff-Davis
Group Publisher

Presiding over *PC*, *MacUser* and *A+*, Loese brings responsible journalism and helpful articles to users of a variety of machines, and exerts considerable influence on the course of the industry's development.

WILLIAM LOUDEN

General Electric, GEnie
General Manager of GEnie

Louden's brainchild GEnie is one of the nation's most popular online networks and conferencing systems, offering information and discussion on a wide range of topics. As both an information resource and a social environment, GEnie's one of the successful pioneers of the medium.

GILMAN LOUIE

Nexa
CEO

Founded a few years ago by Louie and his college buddies, Nexa's acquired an excellent reputation as a software development house. Now that Nexa's been acquired by International software publisher Sphere, expect Louie to continue to guide his company into new markets from games to business.

MARSHALL MAGEE

Magee Enterprises
President

Some years back, Magee wrote a shareware program called *Automenu* to simplify the DOS interface for the bewildered user. He figured it might put him through college. These days, *Automenu* is still shareware and a phenomenally successful program, with a variety of marketing approaches, including sales by the thousand to government agencies.

BILL MACHRONE

PC
Publisher

One of the most-read magazines in the industry, Machrone's publication offers in-depth practical information to the business user. This year it continued to earn the respect of its readers with its coverage of 386 technology, windowing environments, and other innovations in the PC industry.

The Annual Steve Jobs "What's NeXT?" Award

This year's Annual Steve Jobs "What's NeXT?" Award has been awarded once again to the all time master: Steve Jobs. It's like the old gag where the mad professor goes into his lab and all you see is smoke, dust and an occasional explosion. But you know he's soon going to emerge, covered in grime and with his hair all messed up, holding *something*. *Someday*.

We strongly suspect that the NeXT workstation is going to amaze and revolutionize the industry when it arrives. Jobs himelf has yet to emerge from the lab, but like his Apple co-founder, Wozniak, you know he *will* emerge. We just hope he's forgotten our joke by then.

NEXT YEAR'S STORY?

TOM LEONARD, *President, TML Systems.*

There are a lot of talented people who are influential in this industry that aren't famous. Tom Leonard is one of them. He represents the classic microcomputer Cinderella story.

He also represents all those lone ballots we received from loyal employees nominating their bosses. Leonard himself was nominated by his brother and marketing vice president Bob Leonard.

A few years ago Tom Leonard held a high-paying job at Harris Corp. in Florida, where he was working on an ADA compiler for the Air Force. Then Dan Cochren, product manager at Apple, told him about the soon-to-be released Macintosh. Leonard quit his job, borrowed money from friends and ran his business out of his apartment for six months. On his own he developed, introduced and marketed the first Pascal programming language for the Macintosh, a year before Borland and Lightspeed.

His successful company, TML Systems, is now developing both Pascal and BASIC programming products for the Mac II and SE toolbox routines.

Tom Leonard's willingness to forsake the security blanket of a large corporation and put everything on the line for something he believed in is an excellent example of the energy and daring that drives the microcomputer industry.

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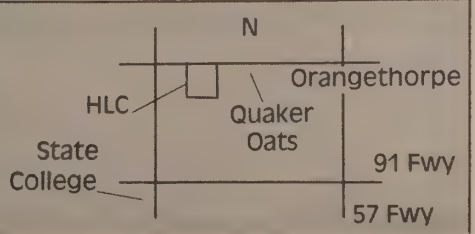

TOM MAREMAA

Infinity Software
President

Maremaa has led his company in the development and publication of several innovative software packages for the Macintosh and the Amiga. Perhaps most notable — *Shakespeare*, a full-color package for desktop publishing on the Amiga.

DUANE MAXWELL

Levco
Hardware Engineer

Not content to rest on its laurels, Levco once again brought out a host of products for the Mac, notably the Prodigy SE board for those who want 68020 processing power in their SEs. Maxwell's already talking about a multi-hundred MIPS board for the Mac II — power users stay tuned.

LARRY MICHELS

SCO
President

Having seen the potential of the UNIX multi-user operating system in the business world, Michels founded the Santa Cruz Operation to market systems and applications based on Microsoft's XENIX. The advent of more powerful processors like the 80386 has suddenly rendered XENIX and SCO's application a compellingly attractive option for the business office.

PATRICK MCGOVERN

IDG Communications
Chairman and CEO

McGovern's company publishes some of the industry's most highly-regarded magazines (*Infoworld, PC World*, etc.) This year they struck a blow for computer *glasnost* by announcing the impending publication of a Moscow-based version of *PC World*.

BROCK MEEKS

Columnist, BIX Moderator

We think Brock Meeks deserves public acclaim for his tireless efforts to spread the word about the FCC's plans to increase access charges for packet-switched networks. Currently deluged with mail from irate modemers, the FCC is attempting to assess public sentiment; if, in years to come, long-distance telecommunication remains within your budget, thank Brock and the many others who raised their voices in journals and online systems across the country.

JOHN MEYER

Ventura Software
President

Last year everybody suspected that Meyer's brainchild *Ventura Publisher* was a revolutionary product. This year, it's lived up to its promise, and despite the release of a version of *PageMaker* for the PC, is probably the state-of-the-art desktop publishing product for that market.

FRED MICHAEL

Zenith Data Systems
Director Market Development and Education

Zenith's enjoyed success this year on many fronts, and launched some innovative products including an impressive flat-panel display monitor. It's also staged some notable marketing coups, including beating out Toshiba and other vendors for a number of lucrative government contracts for lap- and desktop machines.

GWEN MOORE

California State Representative

Assemblywoman Moore is to be commended for her efforts to bring the law up-to-date in computer related matters. She proposed a bill last year to extend the privacy provisions of the state constitution to computer-based communications; although the bill was defeated, she's already introduced a new version this year. She was also instrumental in the formation of The Capitol Connection, a bulletin board specifically designed to facilitate online communication between legislators and their constituents.

TED NELSON

Project Xanadu

Back around 1960, Ted Nelson developed the concepts of hypertext and hypermedia, in the fond assumption that the technology to support his vision would be along in about 1962. Well, it's 1987, the technology's finally caught up, Xanadu's running on a Sun, and Ted Nelson's getting some respect.

RAYMOND NOORDA

Novell
President

One of the industry leaders in connecting computers from the largest to the smallest to create effective work environments, Novell continued to innovate and expand its support of various hardware and software systems. As networking continues to be a crucial concept in the industry's evolution, expect Noorda to keep Novell in the vanguard.

ADAM OSBORNE

Paperback Software International
President and CEO

Osborne continues to develop and market low-cost, high-performance software that builds on a platform of existing standards, adds features and utilizes industry-standard interfaces — notably one similar to that of *1-2-3* in *VP-Planner*. While the outcome of Lotus' look-and-feel lawsuit against PSI remains to be seen, we tend to agree with Osborne's insistence that standards are necessary for the healthy development of the industry.

GLENN PATCH

MacWeek, Patch Communications
Chairman Patch Communications

Patch's company was the first to recognize the expanding market of Macintosh power users in the business world and to address that market with a weekly tabloid *MacWeek*.

AUBREY PILGRIM

Author

One of the first to demonstrate the joys and economic benefits of building your own clone, Pilgrim published his first book, *Build Your Own IBM Compatible And Save A Bundle.*

RON POSNER

Borland Ansa
Borland: Exec VP of Sales
Ansa: President and CEO

Posner's guided Ansa, publishers of the revolutionary database *Paradox*, to a position of prominence and respect among business users. In the wake of Ansa's acquisition by Borland, he'll be instrumental in expanding the new company's scope and foothold in the corporate world.

TRENDS AND PATTERNS

So you want to be an executive?

Our list this year is chock full of top executives:

- 24 Presidents
- 13 Vice Presidents
- 10 Presidents and CEOs
- 10 Chairmen or Chairmen of the Board
- 4 CEOs
- 3 Chairmen and CEOs
- 1 CFO

But if you're a woman...

One of the biggest issues facing the computer industry is the number of women involved in management. While there has been a proliferation of women in public relations and marketing positions, only a few have cracked the upper bastions of the male-dominated computer industry. This year there are only seven women, on our list which is roughly the same percentage as last year. Theresa Myers, president of Quaterdeck, however, made it into this year's top ten, Deborah Coleman, CFO at Apple was on the cover of *Ms. Magazine* and Gwen Moore is a state representative fighting for computer privacy rights in the California State Legislature. Now that the talents of women are becoming more visible, let's hope the numbers start to even out.

Journalists on the wane?

On last year's list of 50 names there were eleven journalists. On this year's list of 100 names there are only nine. Magazine and book sales are brisk, however. Does this mean we're seeing the end of an era where such high profile journalists as Jerry Pournelle and John Dvorak dominated the scene? Are new faceless journalists replacing the old guard?

Hardware or software?

Those involved in the manufacturing of hardware only slightly outnumbered those involved in software: 35 to 33. Sometimes, however, it was hard to draw the line. Companies like Apple. Migent and IBM produce both. What's obvious is the complete dependency of each on the other, and how some companies are covering their bases by producing both.

Apples or IBMs

In the traditional rivalry between IBM and Apple, our readers seemed to favor Apple, six current Apple employees to IBM's two. However, those involved in providing MS-DOS and IBM or compatible software and hardware by far outnumber those at Apple or those providing Apple software. Again many companies are now producing both Apple and IBM MS-DOS products which seems to be blurring the distinction between the two camps. Apple has also publically made a commitment to provide MS-DOS connectivity.

Do you have to be an executive to make an impact?

Traditionally the beauty of the computer industry is the ability to come from nowhere and suddenly be a star. This is true of many people on the list. It has also been true that one person's efforts can have a far reaching impact even if they don't run a company. Our list includes three writers of popular software, two creators of shareware products, two user group computer society leaders, one rock musician and one visionary whose 20+-year-old dream of hypermedia is finally being realized.

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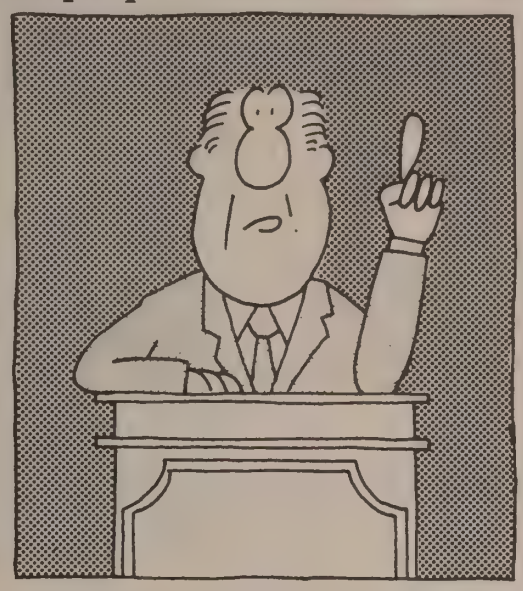

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DAN POTE

Applied Engineering
President

If the Apple II really does live forever, one of the first people to thank is Dan Pote, whose company makes boards to enhance the functionality of the venerable II — right down to running IBM software.

JERRY POURNELLE

Columnist

A longtime advocate of the one-person, one-computer principle, Pournelle is often opinionated and controversial. He continues, however, to be a tireless user advocate and debunker of hype.

SAFI QURESHEY

AST
President and Cofounder

ALBERT WONG

AST
Executive VP and Cofounder

THOMAS YUEN

AST
Executive VP and Cofounder

Under the continued leadership of its founders, AST Research expanded its operations still further, particularly in the area of connectivity, with Mac-to-PC, micro-to-mini and micro-to-mainframe products. It also released a complete desktop publishing system with impressive price/performance ratio, aimed at the corporate market.

WAYNE RATLIFF

Migent
Chief Scientist/Consultant

Author of *dBASE II*, vital member of the *dBASE III* design team, Ratliff is the focal point of a precedent-setting suit between Ashton-Tate and Migent over proprietary technology. Meanwhile, he's hard at work on *Emerald Bay*, which Migent believes will usher in a new era of database technology.

JEF RASKIN

Information Appliance
President and CEO

One of the original Macintosh designers, Raskin is ardently committed ot the notion of simple user interfaces. This year his ideas found shape in the Canon CAT, a powerful, easy-to-use office machine.

JOHN ROACH

Tandy
President and CEO

In the past year Roach has been remarkably successful in taking Tandy beyond its consumer/hobbyist origins to new stature as a serious player in the world of business computing, complete with an effective direct-sales force, offering a low-cost alternative to Big Blue.

THE YEAR'S WORST

Along with the flood of nominations we received we also accumulated a few votes for the year's worst. For those who are interested here's what a few of our voters had to say.

- **OS/2** "For not appearing." *Eds: Runner up for the Annual Steve Jobs "What's NeXT?" Award.*
- **PS/2** "For appearing in the first place."
- "No doubt, no question: **The Lotus Look And Feel Suit Against Adam Osborne's Paperback Software."**
- **Leisure Suit Larry In The Land Of The Lounge Lizards,** for striking a new low in latter-day Neanderthal attitudes toward women.
- **Japan-bashing** and protectionist trade policies.
- **The Federal Communications Commission**'s plan to assess additional charges of approximately $5 per hour on users of packet-switched networks.
- A perennial favorite: **Copy protection.**

HEIDI ROIZEN

T/Maker
President

Publishers of WriteNow, a Macintosh word processor praised by Steve Jobs himself, T/Maker has become, under Roizen's leadership, an innovative and varied source of productivity and entertainment software.

BEN ROSEN

Sevin Rosen Management
Venture Capitalist

Rosen and his firm made the Borland acquisition of Ansa possible. The move is expected to bring powerful, innovative software to the business world and give Borland the ability to nip at the heels of Lotus, Ashton-Tate and Microsoft.

JONATHAN ROTENBERG

Boston Computer Society
President

User groups are a powerful source of feedback to developers and vendors, and a crucial factor in the success of a product. Rotenburg continues to keep the nation's largest and most influential user group a force to be reckoned with.

TODD RUNDGREN

Musician

We applaud Rundgren's work with user interfaces. We applaud even more vigorously his activities at computer shows and his own concerts this year, showing largely non-computerist audiences that these machines aren't just powerful, they're *fun*.

EDWIN RUTSCH

SF XT/AT Clone User Group
Cofounder, Honorary President

Rutsch was one of the earliest spokesmen for the benefits of low-cost PC/XT/ATclone ownership. He continues to promote clones and support their users.

DAN SILVA

Electronic Arts
Research Fellow

The author of *Deluxe Paint*, Silva works to bring ever-more-spectacular graphics capabilities to the Amiga and other machines.

VICTORIA SMITH

The Computer Show
Founder

Starting with a small local TV show to bring residents of Silicon Valley news and product information, Smith has broadened the show's scope and distribution so it now reaches audiences nationwide.

SAM TRAMIEL

Atari
President

While his flamboyant father attracts the headlines, Sam Tramiel keeps Atari running smoothly, consolidating its position as a continuing source of high power and low cost to its customers.

KEN WASCH

Software Publishers Association
Executive Director

Wasch ably guides the SPA as a source of mutual support and impetus for excellence among software developers and publishers, while insuring a healthy climate for continued growth and innovation.

BOB WALLACE

QuickSoft
President

Probably the ultimate shareware success story, *PC-Write*'s author has proved that excellent software and support can be made available without sending either its author or its user to the poorhouse.

JOHN WALKER

AutoDesk
Chairman of the Board

Under Walker's leadership, Autodesk continues to improve and refine its powerful *AutoCAD* software, and to build better solutions for its customers' varied needs by working closely with third party developers.

SCOT WATSON

Red Ryder
Author

While we view with interest Watson's venture into the commercial world with version 10 of *Red Ryder*, we salute him for his years of pioneering work in offering shareware in the Macintosh world. *RR*'s earlier shareware versions are among the most popular telecommunications programs among Mac users.

TOM WHITE

Seybold Seminars
Chairman and CEO

To the busy executive trying to keep up to date with rapidly changing technology, Seybold's seminars and conferences are an invaluable source of training and information.

JOHN WARNOCK

Adobe
President

Warnock's led Adobe through a year of prosperity and innovation. Most notably, the company considerably expanded its software, marketing PostScript based fonts and the elegant *Adobe Illustrator* graphics package.

BARELY-THERE WARE

As we enter a new year, we eagerly await the arrival of these long-promised, long-unshipped products:

- **OS/2**
- **A/UX** (Apple's UNIX for the Macintosh)
- **FullWrite,** Ann Arbor's full-featured word processor for the Macintosh, expected Real Soon Now.
- **Xanadu,** Ted Nelson & Crew's hypertext implementation, rumored to be coming to a Bay Area online system, also Real Soon Now.

We note with pleasure that **dBASE Mac** is now in the stores and no longer qualifies for this list.

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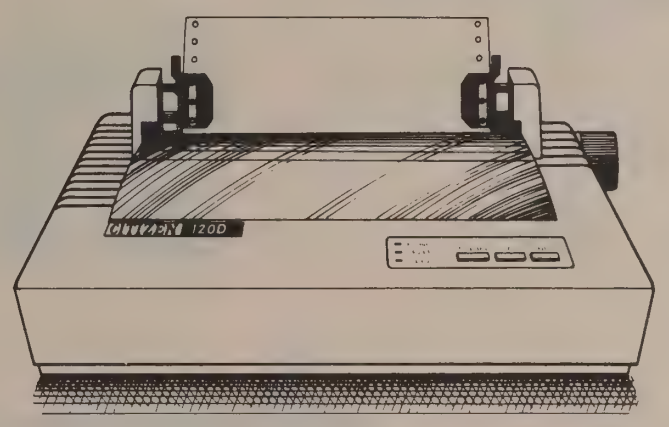

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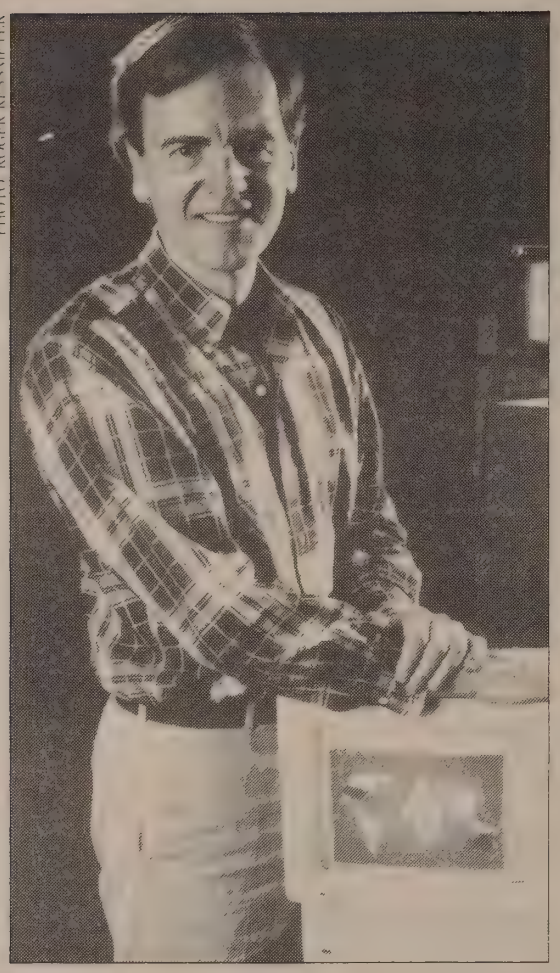

PHOTO: ROGER RESSMEYER

An Interview With John Sculley

what make apple run

By Mary Eisenhart

Apple Computer's had a very successful year. Desktop publishing has functioned as, in vice president Jean-Louis Gassee's phrase, a "Trojan niche," winning the Macintosh first a foothold, then an entrenched position, in the lucrative corporate market. New-generation Macs have arrived, and a ground-breaking software "erector set" *HyperCard* has been released and bundled with all new Macs. The Apple II continues to thrive in the educational marketplace, and the new IIGS is winning wide acceptance. All in all, things are looking pretty good for a company many analysts had all but written off a couple of years ago. And while he'd probably credit the turnaround in Apple's fortunes to its individual employees, much of the change is due to president/CEO John Sculley's ability to fuse the company's visionary origins and obsession with the "insanely great" with shrewd marketing and a recognition of today's business realities.

Other computer companies will sell you a machine. Some of them might sell you a solution. Apple will do both those things, and rather well, but it's also selling you a piece of the future. Somewhere in his book *Odyssey*, Sculley makes the point that Apple's statements and presentations are necessarily heavy on metaphor and figurative language, because the essential business of Apple Computer is based on the development of things that haven't been invented yet. When you watch an Apple commercial, attend an Apple product unveiling or one of its traveling road shows, you're being invited to participate in a glorious experiment. When you buy an Apple computer, you're not just buying a machine, you're staking a claim to limitless possibilities. For Apple, the hearts and minds of its customers are at least as vital to the company's present and future as are their wallets.

When John Sculley arrived in 1983 as president and CEO of Apple, it was a startling development. He seemed a classic buttoned-down corporate executive (indeed, he was affably introduced to his new colleagues as "the guy from Corporate America"), albeit an unusually successful one who'd become president of Pepsi-Cola at the unheard-of age of 38 and was considered a likely successor to the chairman of all of PepsiCo.

However, *Odyssey* reveals another side to that stereotype — we see Sculley as the breaker with tradition, the maverick among the Suits, able to create successful marketing strategy around social change. The roots of Apple's masterful use of hoopla, for instance, can be found in one of Sculley's early triumphs, the Pepsi Generation commercials. A campaign to bring Pepsi a new image as the choice of the baby-boom generation, it used beautifully photographed scenes of often-astonishing emotional intensity. It shook up the formerly staid cola company and brought it hordes of new customers. As Sculley says in *Odyssey:*

> Suddenly we had a revived product and a whole new social group who identified with Pepsi as if it were a new religion. The commercials were successful because they articulated a lifestyle to which a new, more affluent, generation of Americans could aspire, a generation which, of course, drank Pepsi. It showed life as people want it to be, without complication or distraction — a young boy playing with puppies in a field or a cute little girl who dropped a piece of watermelon on her dress. The vignettes of life's "magic moments"...captured America's imagination. They evoked cherished middle-American values, of familial love and the innocence of children. The commercials subtly positioned Pepsi as the modern American soft drink, and by contrast, Coke as the old-fashioned cola.
>
> ...Marketing, after all, is really theater. It's like staging a performance. The way to motivate people is to get them interested in your product, to entertain them, and to turn your product into an incredibly important event.

Odyssey offers a vividly-drawn study in contrasts — the rigidly structured world of Pepsi, a highly competitive environment where Coke was The Enemy and careers made or broken over tenths of a percentage point of market share, compared to Apple's loose structure, impatience with convention, obsession with vision, and ongoing state of creative anarchy. It tells of the persistent attempts by Apple's mercurial founder Steve Jobs to persuade Sculley to assume the presidency of a young computer company, a campaign that finally succeeded when Jobs threw out the challenge, "Do you want to spend the rest of your life selling sugared water, or do you want a chance to change the world?"

The book chronicles Sculley's acceptance of the challenge, his growing friendship and philosophical affinity with Jobs, the disintegration of the friendship and peril to the company in the turbulent days of 1985 as the bottom fell out of the consumer market for computers. It continues with the reconstruction of the company to its current prosperous state, and paints a glowing picture of a future in which individuals have powerful, intuitive tools (Sculley postulates one called a Knowledge Navigator) with which to work and learn.

More than just another tale of life at the top, though, *Odyssey* offers a unique perspective on a world in transition. Not unlike Gassee's book, *The Third Apple*, released earlier this year, it evangelizes Apple's perspective on how the world, business and otherwise, is evolving, and what a forward-looking company can do to prepare for it. Thanks in part to talk-show appearances and other strategic promotions for the book, its message is reaching an audience far beyond the personal computer industry.

Apple is, in a sense, its own most important product, and Sculley has proved himself a master at making it "an incredibly important event."

What appealed to you about Steve Jobs' line about sugared water and changing the world? The typical successful corporate type probably wouldn't have cared at all — why did it work for you?

Because I was known to the outside world as the archetypal corporate executive, but I was really a romantic at heart. I had always been interested in things that had very little to do with business. I was interested in electronics when I was young, and I was interested in the arts. And to suddenly be posed with the choice of continuing the life that I had lived as a professional manager, or going off and doing something that was not only radically different, but much closer to what my earlier interests were, really hit home.

In 1987 we spent 191 million dollars on research and development. That's more than the research and development of Microsoft and Compaq and Sun and probably a couple of other companies added together.

What about the world needed changing?

I felt that there was a chance to do something that was different from the heavily institutionalized world that I was a part of. Here was someone [Jobs] who had no baggage at all from the industrial age, and was talking about a whole new age, the information society, and one in which Apple itself had made some significant changes — it created not only the company, it created a whole industry. And I was being given the opportunity to be a part of it. My sense was that we were just at the beginning.

You were pretty successful in the institutionalized world — why were you anxious to leave it?

I *wasn't* anxious to leave it.

But you did.

I think it caught me at a point where I was either going to sit back and enjoy the fruits of my work over the years, which is what most people in corporate America do at some point. But I was about ten years early — I was about ten years younger than most people are in corporate America who have that kind of position. So I wasn't in my middle fifties, I was in my middle forties. The idea of packing it in in my middle forties didn't make a lot of sense to me, and yet I couldn't figure out what else I wanted to do.

And then suddenly I was confronted with a chance to do something which was a complete unknown to me, and which I felt I was very unpre-

pared for, but one which became extremely haunting almost, because it kept coming back to me time and time again as — maybe this is what I was *really* interested in doing. And maybe I never should have gone off to corporate America in the first place. It was only by accident that I really did.

Would it have been possible at the time you went off into corporate America for you to have done this?

Pretty unlikely, because it didn't exist. Silicon Valley was still apricots.

The reader discovers in my book that I was actually very much wrapped up in technology when I was young. I loved it — I never played with toys, I always played with parts from radios and took things apart — I was much better at taking things apart than putting things together (laughs).

What factors enabled Apple to come into existence at the time it did?

I think, like most success in the world, timing in life is everything, and Apple had extraordinarily good timing. Because if it had come out with these ideas ten years earlier, the technology wasn't ready to implement it.

Look at Ted Nelson [who created the hypertext concept in 1960].

Sure, look at Ted Nelson — there are a lot of people you could look at who had many of the same ideas, back in the 1960s, but the technology wasn't there to be able to implement it.

And Apple had just the right mix of people with its founders, and the right skills — Wózniak who could build it, Jobs, who envisioned the company, Markkula, who was savvy enough to be able to set the company up and get a strong board of directors, and Mike Scott, who could actually operate it. So they had, I guess, a combination of the right people at the right time. It happened to be not just the right time to start a company, but the right time to start a whole industry.

You spend a fair amount of time in your book drawing the distinction between second- and third-wave companies.

Well, the idea of second wave and third wave was first introduced by Alvin Toffler with *Future Shock*. It begins with the first wave, which was the agrarian society we had back in the 19th century, and then we went to the second wave, which was the industrial age, with factories and mass production.

Now we're in the third wave, where the natural resources are no longer strategic as they were in the industrial age, meaning oil and coal and iron ore and so forth. Today the strategic resource is information. In the information age, the technology ramp is so rapid that it requires people to take tremendous risks in order to be successful.

So the characteristics of a third-wave company are very different from a second-wave company. In a second-wave company we look for size, market position, stability, self-sufficiency and vertical integration. It's largely a world of competition, competing for a share of existing markets that are growing relatively slowly.

In the information age or the third wave, we see that flexibility and focus on, not the quality you can afford, but the best quality that can be built, are key aspects of succeeding. And we're not really trying to compete for an existing market, we're trying to build brand new markets, often using technology to define the products that will shape those new markets.

So the whole thrust of leadership shifts from the John Wayne model of the leader who is invincible to a new definition of a leader who has to be willing to not only take risks, but make mistakes, learn how to recover from those mistakes, and then not lose their courage to go on and take additional risks. And so I wanted [in *Odyssey*] to show the vulnerability of leaders, that they had to be more human than they were in the industrial age, because they don't have the fallback safety net of large institutional structures to sort of prop them up and to make them look better than they really are.

When I first came to Apple, I asked, "How are we going to exchange data from one personal computer to another?", and someone threw a floppy disk across the room and said, "That's all we'll ever need." With a standalone vision, that's all we ever did need. But clearly that's not where the world's headed.

How is Apple structured differently from the more conventional companies you came from?

The big difference is that Apple is built around the idea of a network, rather than around the idea of a hierarchy. A hierarchy which is modeled after either the Catholic Church or the military models is the traditional form of organization in a corporation in the second wave. In the third wave a network is a better metaphor, because what it does is legitimize a thing that always existed informally anyway.

We know that even in the most traditional corporations the informal network is really where most transactions happen, and where most ideas are passed from one group to another. In third-wave companies, which are really idea-intensive, which are driven by the success of your ideas and turning them into products, it's even more important to legitimize that informal network. So you'll find that there's very little emphasis on layers in the hierarchy, there is little emphasis on titles, little emphasis on corporate perks, and a lot more emphasis on communications. So at a company like Apple — just yesterday we had a communications meeting with over 3,000 people. That would be something that would just never happen in a second-wave company.

People don't have to buy into the vision in a second-wave company, they have to buy into the policy manual. Policy manuals don't mean very much in third-wave companies. What people want to know is, are they committing themselves to something that's going to make a difference, and are they going to have a chance to actually be a part of it. Those kinds of questions rarely come up in a second-wave company.

What advantages does this approach give Apple over some of its competitors?

I think the obvious comparisons are with companies like IBM and AT&T. AT&T is probably the archetypal hierarchical organization, and look at the difficulty they've had making the transition from a public utility into a competitive private enterprise company trying to compete in the computer industry. It's reported that they've lost in excess of a billion dollars a year for several years in the computer industry.

I think that what many thought would be the undoing of Apple Computer just a few years ago, which was AT&T's size, their huge research capabilities with Bell Labs, has not turned out to be the case, because large institutions don't have the flexibility to change quickly. They don't have the ability to make decisions rapidly. And we know that in the personal computer industry things are happening so quickly that the more agile you are, the more driven by a vision that is understood throughout the company, the more likely you are to be successful. I think even IBM, which has been recognized by many people as one of the finest corporations in the world, has had difficulty making that transition. Because IBM, even though it's a high tech company, is clearly a second-wave company, not a third-wave company.

You also introduce the concept of culture vs. genetic code in companies.

Well, we've heard so much in recent years about corporate cultures, and yet culture is an idea that looks backward. It has the historical context of saying, this is where we have come from, this is the set of traditions that the company has. That is probably more relevant for a second-wave company that doesn't have to look forward, but is designing its plans basically as extensions of what it's already done in the past.

The problem is that in the third wave we are creating brand new companies, brand new markets, brand new technologies, brand new products, and therefore you want to have a way of establishing an environment that people can not only recognize, but one which is going to be extendable into the future, not just have its roots in the past.

So I prefer the metaphor of genetic code, which says there are certain characteristics, certain values, that a company has to recognize from its earliest days, and if you can define what those characteristics are, then you look for those characteristics to be present regardless of how large you may get, or how complex your business may get in the future. Just as the genetic code stays with us throughout our lifetime, as the cells in our body change every seven years.

I think that what I'm trying to do is get people to think about values, more than culture, and think about values in terms of how you take the best characteristics and extend them into the future, but also have the flexibility to recognize that the

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company's going to be constantly changing, constantly reinventing itself. That's something which is hard to reconcile when you're looking at culture, which is so tradition-bound.

From the perspective of now as a point in a long evolution, what do you think the essential messages in Apple's genetic code are right now?

I think that Apple's code starts with a vision, and the vision is that we're going to change the world by focusing on the individual and giving individuals incredible tools that are based on technology. And that these tools will be powerful enough to change individuals' behavior, the way they think and communicate and learn. That's the essence of Apple's vision.

Then the values, which are the other part of our genetic code, are that we must be able to attract very talented people who are going to be creative, and give them an environment where they can be able to be extremely successful. So it means an environment which is going to put more emphasis on the individual, more emphasis on small teams, than it does on the traditional issues of control and process that you find in large organizations.

Consequently, regardless of how large Apple gets, I believe the company will always have a right-brain tilt to it. It'll always appeal most to the people who would have a hard time finding any other corporation that they would ever want to go to after working at Apple. They might go start their own companies — that happens in many cases. But the likelihood that they would go to another large corporation would be extremely remote, because Apple does put such an emphasis on attracting people who care about the creative side of business.

But in the course of attracting such people you also introduce a considerable chaos factor, right?

Which is the duality that we're finding — not only in business, we find it in the sciences.

I often look for guidance, not from other business people, because there aren't very many role models, but I look for guidance sometimes in very unsuspecting places.

As an example, if you look at some of the new physics concepts — for instance, Heisenberg was able to demonstrate that the more you know about a particle's position, the less you know about its velocity. The more you know about its velocity, the less you know about its position. So what we are learning is that it is possible for things to have a duality to them. Einstein amongst others, and Maxwell, pointed out that light is both a particle and a wave, so it can have two existences at the same time.

That's what I think we're finding in the new corporations, that you've got to have an existence which focuses on creativity and gives the individual a great deal of freedom, but you've also got to have a sense of order. And the order doesn't mean control, it doesn't mean rigid policies or hierarchy — what it does mean is that there has to be an environment which allows things to be free, but also have things headed in the same direction.

Directions become very important in a third wave company, not necessarily goals as tightly defined as in a second wave company, but more of a Taoist idea, that the further you head in that direction, the more you learn about where you want to go, and you're constantly pushing the ultimate destination further and further out. And that's almost what we have to do in a company like Apple, because we can't say specifically what our world is going to be like five years or ten years or 15 years out, but we know the directions we have to head in, and the further we make that journey, the more we never actually reach the destination. We're constantly pushing the destination out.

We have chosen not to license our technology, and have no intention of doing that in the future. IBM used somebody else's technology, Microsoft's, and now is finding their share of market being consistently eroded by the clones.

Well, those are ideas, whether they come from system cell theory in biology, or whether they come from Taoism or holistic ideas in thinking about the world, or whether it's new physics, that are actually better metaphors and better role models for things that we're doing in business. Now, if I were to go back and tell my former colleagues in corporate America that we were using Taoist ideas and holistic concepts in management they would think that I'd been in California too long (laughs).

What's the thinking behind Apple's continuing policy not to license its technology and to keep it all proprietary?

We have chosen not to license our technology, and have no intention of doing that in the future. The evidence that we think that that's right is to look around us. Look at IBM, that used somebody else's technology, Microsoft's, and now is finding their share of market being consistently eroded by the clones. Not only is their share of market being eroded, but the whole value of their technology is not well understood, because the clones don't invest in any research to create new technology, all they do is come in and copy what's already there. For the industry, that's a losing strategy. As we saw with the Macintosh's success in desktop publishing, by taking the technology path where you can do things in a better way, you can actually create brand new markets.

It was during that very time in 1986 that Apple was starting to grow with desktop publishing, that we saw the rest of the industry languishing. There *wasn't* much growth in personal computers in 1986. It's only been in 1987 that the industry started to see real growth again, and it's coming primarily when we see new technology breakthroughs.

From our standpoint, we believe that we have a unique opportunity, because we're the only personal computer company, including IBM, AT&T, Compaq, or anybody else, that owns its own technology — for CPUs, for printers, and for all the systems software that we do, which includes workgroups. What we want to do is show that we can continue to innovate by having the control over our own technology, not having to be paced by what someone else is doing.

At the same time, we know it's a multi-vendor world, and we have to be able to integrate into that world, and consequently we are adopting more and more standards, but they're standards that are in the background, that aren't obvious. They could be printing standards, like PostScript, or they could be networking standards like Ethernet, or they could be other standards like the ISO model for communications, or it could be the connectivity into the IBM world through token-ring standards. We don't have to create the standards, though in some cases we've helped do that, but what we really have to do is to make sure that the individual isn't working with standards, that the individual is working with something that's recognizable to them.

Our innovation is totally focused on the man-machine interface, with a lot of standards in the background. We think that we could never afford the proprietary technology that we have unless we knew that we could retain the value of that technology. Because the crown jewels for Apple isn't our hardware, the crown jewels for Apple is our systems software. In 1987 we spent 191 million dollars on research and development. That's more than the research and development of Microsoft and Compaq and Sun and probably a couple of other companies added together.

Is HyperCard part of this strategy of supporting the individual and creating an individual work environment?

I see *HyperCard* as one of those extraordinary technologies that somehow got left out. Remember, almost every technology that we have on the Macintosh was created in some form long before Apple Computer was ever founded. At a lot of places.

What we had to look at, as we went out to the 1990s, was, were we going to have all the right root technologies that we could build on in the future? And the one that seemed obviously missing was hypertext. Because hypertext was a way of simplifying the one thing that had not become very human, and that was databases. Databases still required you to be a computer expert in order to do anything useful with them. You had to program in some language.

So what we did was, we said hey, this is the technology that got left out, so now we've got to find a way to bridge it in. Fortunately, Bill Atkinson, one of our real superstars, was excited about hypertext and was able to create a technology that went beyond an application, but really had the potential of becoming, over time, part of our systems software. And so what you're seeing today is the Mac 128K version of *HyperCard*. In other words, it's just the beginning of where we think we can take *HyperCard*.

Why did you go to bat for Bill Atkinson on the subject of bundling it, which was a somewhat controversial decision?

To me it was never even an issue. It was logical that if this was really going to be something that was going to be important as a technology platform of systems software, that you had to make it standard with every computer that was out there, or people wouldn't incorporate it.

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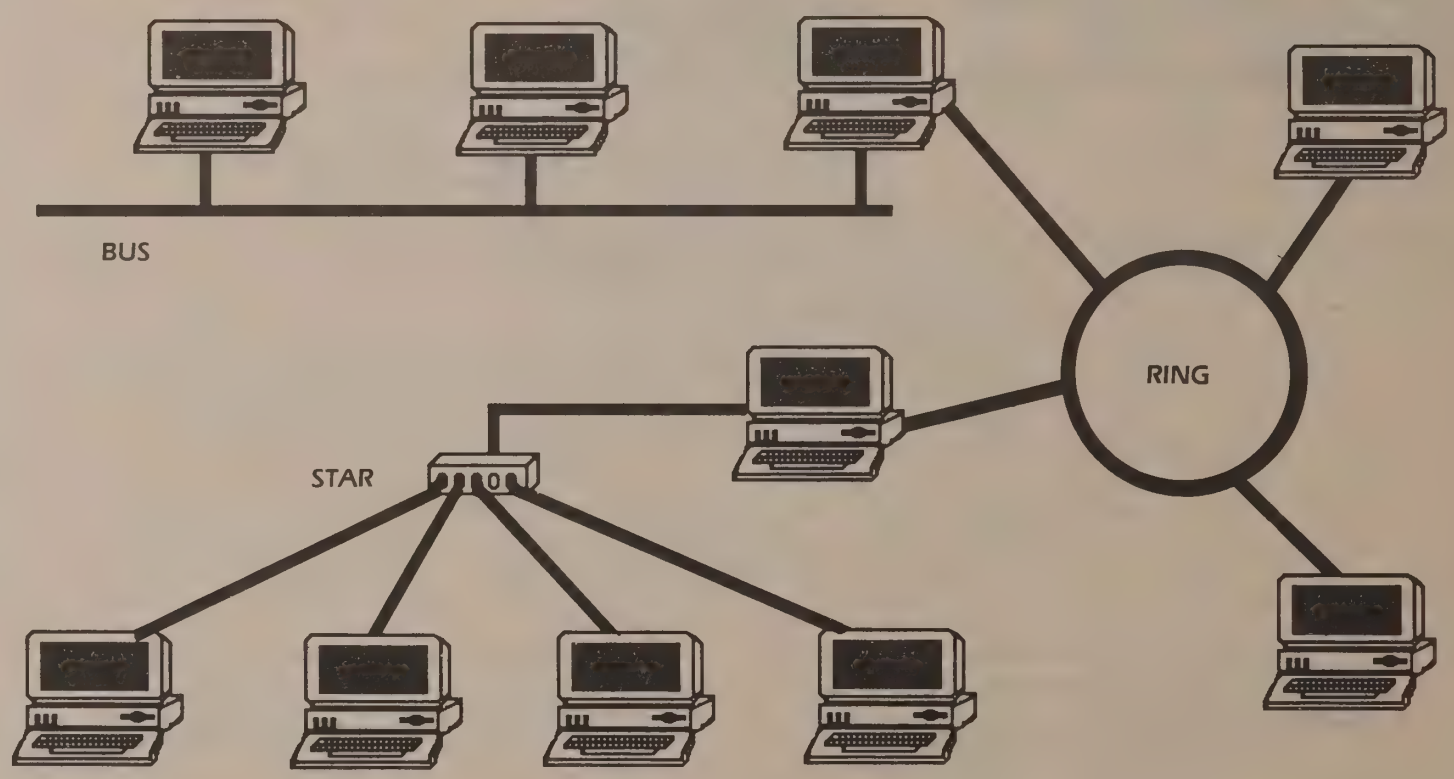

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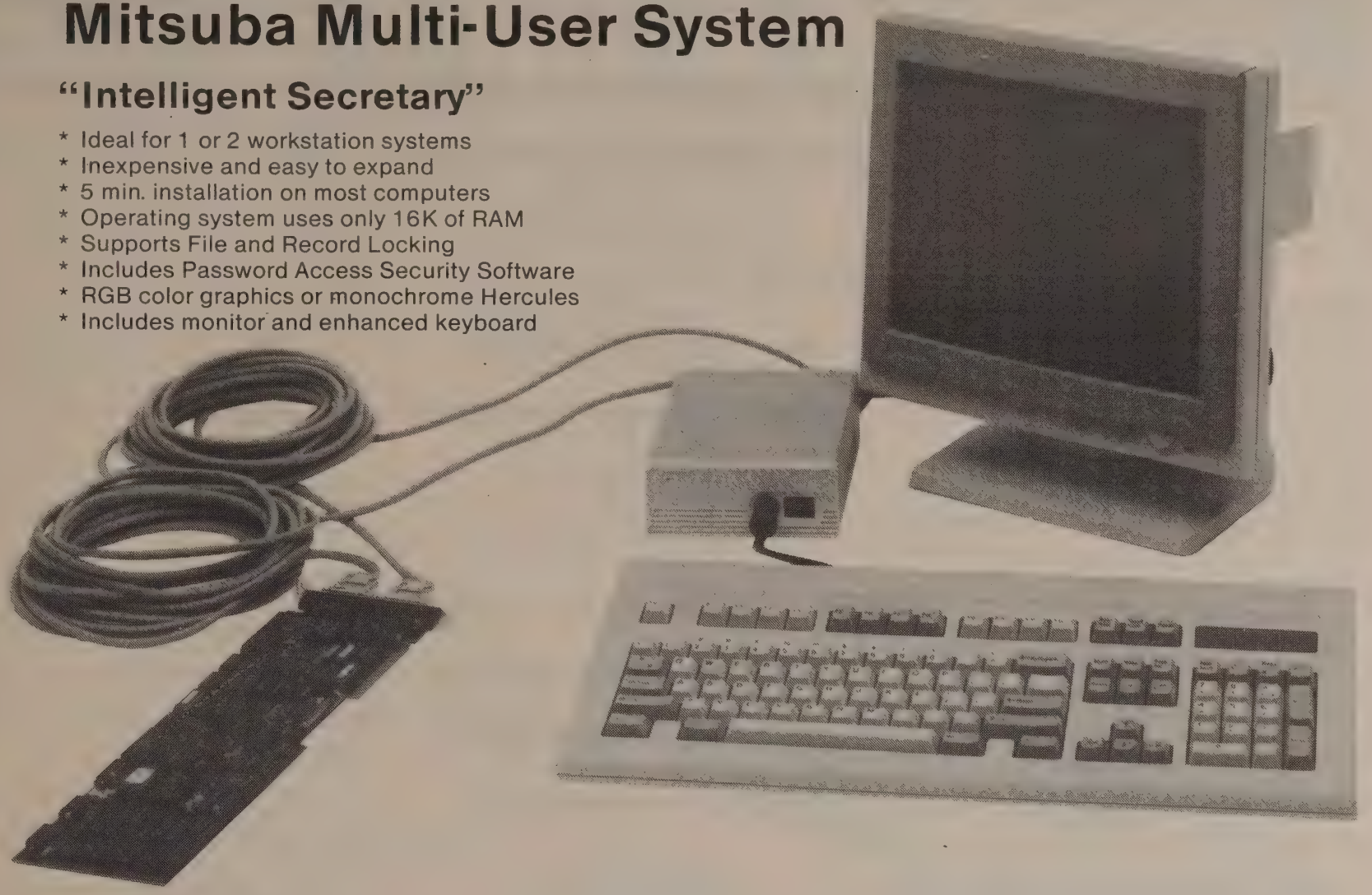

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caught on with education, with enthusiasts, with business people.

And remember that *HyperCard* isn't the first attempt at trying to bring hypertext to the personal computer. We had *Owl Guide*, we had other products, *Zoomracks*, things like that, which were less successful because they were looked at as just another application. What we're trying to do is to say that there's a fundamental technology platform that ought to be available for any application to use parts of it, and therefore making it horizontally available by bundling it seemed very logical to me.

What happened to the notion of one person, one computer?

One person, one computer has never been abandoned. What we have tried to do is broaden our bandwidth of what that idea means to say, that it can't be one person, one computer, isolated from the world, but it's got to be one person, one computer, *connected* to the world. The importance of connecting up to other computers, connecting up to other people, connecting up in a multi-vendor environment, is one of the big changes. So I'd say we say one person, one computer, connected up to the rest of the world. We've added an extension to that vision, which actually adds probably the essential requirement in order to succeed long-term.

When I first came to Apple, I asked, "How are we going to exchange data from one personal computer to another?", and someone threw a floppy disk across the room and said, "That's all we'll ever need." With a standalone vision, that's all we ever did need. But clearly that's not where the world's headed.

Originally Apple was very strongly focused on the home/consumer market. How did you become disenchanted with that?

Well, the only logic I think that anyone can use to say why Apple would have ever recruited someone who knew almost nothing about computers, and only had had experience in marketing to consumers, was that the idea was that Apple was going to build a very successful consumer products company. And as we've seen, the personal computer industry has not turned into a consumer products industry. To the contrary, there have been billions of dollars lost by a large number of companies, some of whom aren't even around anymore, just in the years that I've been in the industry.

What we have discovered is that getting computers into people's homes doesn't necessarily mean that you're going to get them to actually use the computers. Today we don't try to sell computers to people unless they have an idea in mind what they're going to do with them. So that we sell to home education, but it's because people know that they can run the software their kids are using in school with Apple IIs. Or we sell to the home office because they know they can run a business out of their home or they can use it as an extension of their office office computer work. But we don't try to convince anybody that they ought to balance their checkbook or keep track of their recipes or things like that. As farfetched as that seems, that's really how the personal computer industry was talking to people only a few years ago.

So the main areas you see growth in are education, higher education and mainstream business, is that correct?

Yes. It's not that we don't sell computers to individuals, because we sell a lot of them. It's not that there aren't computer enthusiasts amongst them, because we have a lot of enthusiasts, as is evidenced by the strong support we have from user clubs around the world. But it's like Willie Sutton said when asked why he robs banks — because that's where the money is. (laughs)

It's not that we don't sell computers to individuals, because we sell a lot of them. It's not that there aren't computer enthusiasts amongst them, because we have a lot of enthusiasts, but it's like Willie Sutton said when asked why he robs banks — because that's where the money is.

And it's true with computers — most of the money spent on computers comes from business and from government. And, because of Apple's special interest in education, it's logical that we continue to grow our position, not just in K-12 but also in higher education. So that gives us a very fertile marketplace to focus on, but it's meant a total repositioning of the company.

We were a home computer-education company two years ago. We're now a business-education company, and probably the best evidence of the repositioning of our company is how the marketplace has valued us. In the summer of 1985 our market value was around 850 million dollars. And before the market meltdown we reached, I think, something like 7.5 billion dollars. Even today, we're still well over five billion dollars in market value. It all can be attributed to the work of a lot of people at Apple. This wasn't a turnaround of any single individual, it was a lot of people at Apple buying into the idea that we could reposition the company, and do it in a shorter period of time than any other company had done that before.

Do you have any problem with the elitism that's inherent in that strategy? Aren't you aggravating the information rich/information poor dichotomy by going after the big-money markets, which is certainly different from the Two Steves/Homebrew vision?

Well, I think that what technologists should do is to build the absolute best tools that we possibly can; and then it's incumbent on all of us in society — not just the technologists, but also the business people, the educators, and the government leaders, to then figure out how we make sure that we don't create a class society with haves and have-nots.

But to compromise the products so that nobody gets a product that's going to make a difference, to me, is not a good fallback. I think we have got to get people excited, that we can do so much in changing people's behavior, in revolutionizing our education system, by creating tools that can offload a lot of the monotonous work from the teacher, to have more time for teachers to spend with the students, to take a heterogeneous society as we have, perhaps, in California more than any other area in the world, and say, how do we leverage the strengths of those differences that people have so they can learn at their own pace and in the way that they learn best?

These are the things that we can solve with technology, and if we solve them in the best possible ways, then I think it's going to become more obvious to our government leaders in particular that they can't give benign neglect to education. My sense is that the revolution of education will have to start with the technology tools. It isn't trying to compete with books any more, because students really don't read that much. It's trying to compete with video arcade games, with MTV, with special effects films, and so we've really got to introduce the entertainment value in learning, and make it as enjoyable to learn as it is to do any of those other choices.

Therefore, to compromise the technology just to make it cheap, I think, would be like shooting ourselves in the foot. Because we know the technology is constantly getting cheaper, but we need someone to fund the development of it, and the only people that are going to fund the development are the big markets that have a real need for it in terms of improving their productivity, such as business or such as government. Eventually it'll allow us to get the cost of that technology down, so that we can introduce those ideas into education. But education as a market by itself couldn't possibly afford the research and development costs that we have to spend to get these kinds of breakthroughs.

How successful have you been at convincing educators and legislators of all this?

I think it's amazing how well understood these ideas are when you get down to the local level with teachers, even all the way up to — for instance, a few days ago I was meeting with the president of the Los Angeles Unified School District, and they really understand. Bill Honig, who's the superintendent of education in California, understands. Where it breaks down is when we get to the elected officials above that. For some reason they are fast on the cliches, but they're hollow on the answers in terms of what they're really going to do to make education better.

In our own state of California we have been slipping like a landslide in terms of our rankings of where we stand with the other 49 states, and yet we're not even putting in as much investment in education percentage-wise as we were a few years ago. We're trying to rebate it back to the population.

I think those are very short-sighted decisions our politicians are making, and if you go up to the national level I think the decisions are even more short-sighted. We're trying to, in effect, disassemble the Department of Education and essentially just hope it'll all go away, and somehow it'll solve itself through a non-regulated environment, and I think that's very naive.

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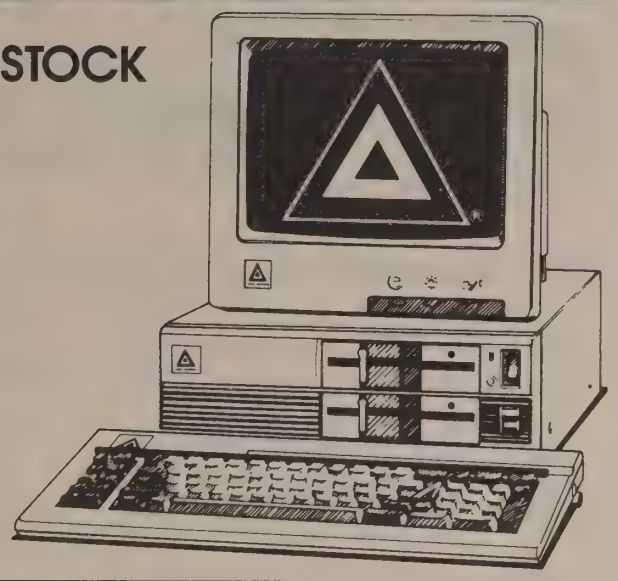

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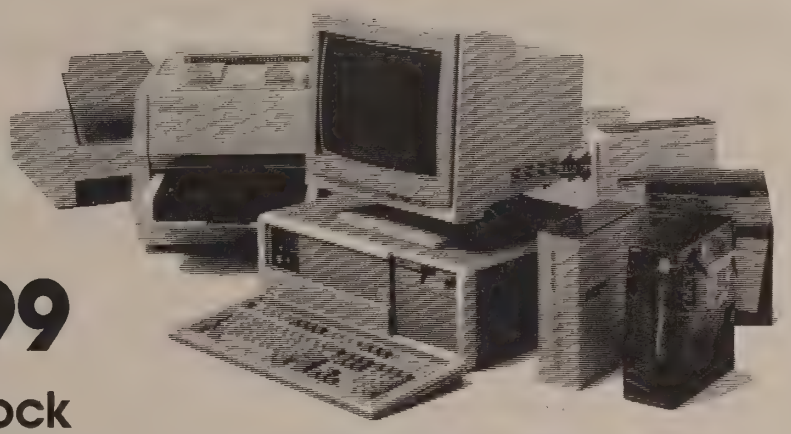

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Is the publication of your book and Mr. Gassee's book in the same year part of a campaign to acquire mindshare in the outside world? It seems like what both books are doing, in large measure, is explaining the ideas behind the machines, the why rather than the what.

Yeah. See, I think we have to remember that we're coming up on a presidential election year in 1988, and my sense is that we can't even talk about issues until after the nominating process. No one will get nominated by the Democrats without taking a very far-left position that will meet a lot of special-interest groups, no one will get nominated by the Republicans without taking a far-right position that will meet a number of special interest groups, and yet we know that in the final campaign both candidates will have to come to a more centrist position in order to get elected.

And at that point, since California has really no role in the primary states for the nomination process, we suddenly become very important as a state in terms of who's going to get elected, and the chances are it'll be a close election. So I think there is a real opportunity to capture national attention on the issue of education in the 1988 presidential campaign, after the candidates have been nominated. My sense is that all the candidates will have very positive things to say about education, and I think they'll be essentially hollow answers.

So that's why I think it's time to speak out now and find out how much grass-roots support there really is for education. I think there's extraordinary support for it, because people really do understand, even if our politicians don't — the people understand, the educators understand it, the teachers understand it, the students understand it, it's amazing that it can't be understood in better ways by people higher up in government.

My sense is that my book and others are going to help galvanize a lot of attention to these issues, and what we need to do in the coming months is to get those people who care lot about education to start to articulate, in ways that the broad population will be able to understand, that there really *are* choices, we don't have to sit back and watch our education system go into the drink.

Does your ACOT [Apple Classroom Of Tomorrow] experience funnel into this?

ACOT helps, but it's not the total answer. The ACOT experience is that we've taken Apple II computers and put them in the classroom so that almost all the students can have one available to them, and then give them access to an Apple IIc at home. There have been remarkable changes, not only in their behavior but also in their test scores.

But that isn't the total answer. The real answer comes when we can get more and more curriculum-based software, get the computer out of the computer labs, stop teaching computer literacy, and start integrating the computer as a basic learning tool that will let individuals work separate from the regular classroom routine, or even get it integrated into the classroom routine where groups of students are working on common projects. We've just barely scratched the surface in terms of the real impact that the computer can have in education.

My big interest is to make sure that it doesn't become the device which frees some of us but then leaves a lot of us on the outside, and that's one of the risks in the urban areas, because the number of computers in urban schools is discouragingly low. And even the ones that have gotten in there aren't being well utilized because nobody knows what to do with them.

That's why we have got to get some help from government leaders to say this is a national priority. It seems to me that this country has always had the right leadership at the right point in time — we had the Marshall Plan, we had to reestablish the strength of Europe, which meant a free world back in 1948. We had the highway system put in when we had to have a highway system put in, which opened up tremendous commerce for the United States in the 1950s and 1960s. We had the NASA program to the moon, which gave us tremendous technology throughout the 1970s. But more recently we haven't had the major investment in the infrastructure of our country that we're going to have to have as we cross over to the 21st century. Probably the biggest investment is the investment in our education system. This is the right moment for a leader, regardless of which party that leader's from, it's not important, to say "what can I do for the education system?"

My sense is that 100 years from now the people in this country or in the state of California will look back to the late 1980s, and they won't remember what the INF agreement was, taking 3% of the nuclear firepower in the world and disbanding it, or they won't even care that we had a tax reform in 1986. What they *will* say is did we, or did we not, do anything about our public education system. Hopefully, they'll say that we seized the moment and took the steps to start to revolutionize it, and that we got some more intelligent people into government, and people who didn't go into government who cared about those issues and started to work together to galvanize a lot of support across the country.

Apple has a strong presence in the universities. How do you see that affecting future change?

My big interest is to make sure that the computer doesn't become the device which frees some of us but then leaves a lot of us on the outside.

It's an extraordinary opportunity, not just for Apple but for the whole world, because Macintosh has become a part of many people's college education. What it means is that, after they graduate — and in June of '88 we'll have the first class that will have had Macintosh through all four years of college — when they go out into the world, regardless of what they're going to do, many of them go out with a genuine love affair with their computer. So it isn't as though it's some machine they have to use just to get by. It's a tool which they think gives them an extraordinary advantage over others around them.

The more and more people that go out in the world, regardless of where they end up, with that feeling that they have an extraordinary tool to work with — they're bound to come up with better ways of doing things.

As we've made this transition from the industrial age to the information age, what we've learned is that the old ways of doing things just aren't as effective any more. So if we can get a refocus back on the individual, and say that we can offset the overspecialization, the overinstitutionalization, that we were left with at the end of the industrial age, and give individuals the tools to go out and do things in better ways, my sense is we'll start to not only be more competitive, in a global economy, but we'll also be able to show real productivity gains. So those Macintoshes which have been on campuses for the last four years — it's sort of like the invasion of the aliens.

The pods are coming...

The pods are coming. (laughs)

Where would you like to see Apple in 1997?

I would hope that by 1997 that we will be well on our way towards creating a product like the Knowledge Navigator that I describe in my book. Most of the technologies are already incubating in the universities or labs, some in Apple's own lab. I think this would be an extraordinary product, because it would have the potential of maybe changing the world as much as the printing press changed the world back in the Renaissance. It's got its roots in things that are already present in the Macintosh, and it's got its roots in other things which we aren't doing yet.

But my sense is that, timing in life being everything, that once again, just in 1977 the timing was right to start the personal computer industry, in the late 1990s the timing will be right to make a dramatic impact on the world, with individual tools that are even more remarkable than the ones we have today. And I would hope that Apple is still the leader and the innovator in terms of shaping what that world might be. □

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Adobe Illustrator

You Don't Have To Be An Artist To Love It

By Mary Eisenhart

When the Macintosh arrived on the scene a few years ago, its graphics capabilities were among its most mind-boggling features. However, as serious users soon discovered, the available graphics had severe functional limitations.

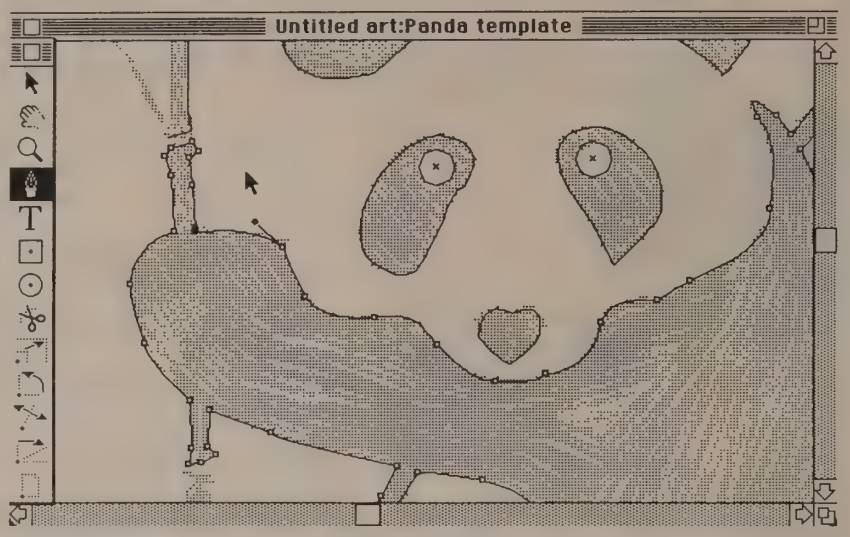
Using the Mac with various software and peripherals, artists could create freehand art, capture screens as *MacPaint* files, and scan hardcopy art into *MacPaint* files. Unfortunately, the results were WYSIWYG in the worst sense — what you saw was, in essence, what you were stuck with. Since the graphics were bit-mapped, they weren't particularly easy to work with, as anyone who's ever tried to edit a badly-scanned file in FatBits can attest. Enlarging and reducing bit-mapped graphics is cumbersome at best, and the best resolution supported was the LaserWriter's 300 dpi, even if the graphic was part of a page being output on a PostScript-based typesetting machine with far superior resolution.

Object-oriented graphics programs such as *MacDraw* and *MacDraft* deal with problems of sizing and the like more effectively. They also support the best output of which a device is capable, but are severely limited in their ability to handle curves and irregular shapes.

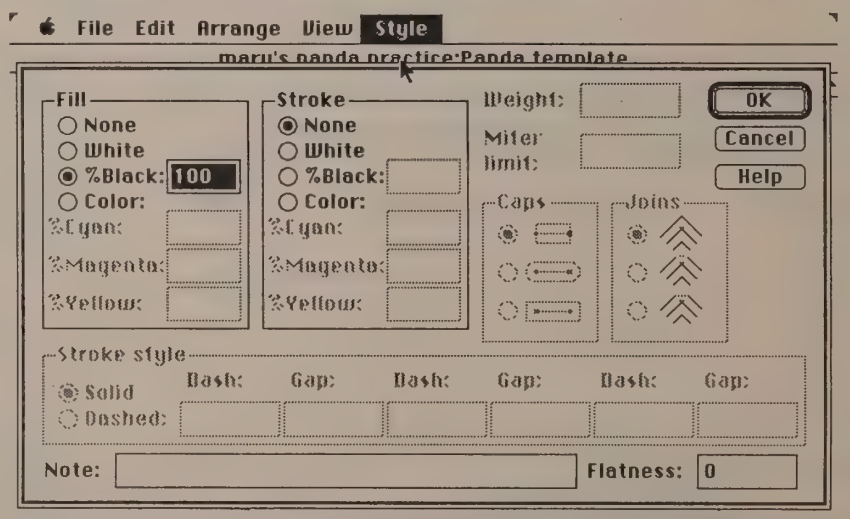
Adobe Illustrator, a powerful PostScript-based graphics package, addresses these limitations very effectively. Its price tag ($495) probably puts it out of the range of the casual user, but if your work involves extensive use of scanned or other bit-mapped art, if you use a variety of PostScript-based output devices, or if you need to change the size or composition of graphics files often, you owe it to your sanity (and productivity) to check out *Illustrator*.

Why PostScript?

PostScript is Adobe's proprietary page description language, which previously was most in evidence in type fonts. The beauty of PostScript, as applied to graphics, is that it defines each line in your artwork mathematically (instead of as black or white pixels), so that, as long as you're using a PostScript output device, you get the best resolution the device supports. You can also preview your work on a non-PostScript, but definitely cheaper, ImageWriter.



Using an imported bit-mapped file as a template, Illustrator lets you create a PostScript-based graphic by drawing lines around the contours of the original art.



Once you've drawn the lines, you choose paint colors and patterns to fill the defined areas. Illustrator offers a full range of options for fill and outline strokes.

At this stage, it's a good idea to preview your work to eliminate surprises and make sure all areas are properly defined and painted.

While *Illustrator* can be used as a freehand drawing tool, this is not its particular strength. It excels by giving you the ability to convert existing graphics (either *MacPaint* or PICT format) into something you can easily customize to your particular needs. Adobe sends you two Gallery disks of art ideas for starters when you mail in your registration card; you can also use files in clip art software or screens you've created in other applications as a foundation for *Illustrator* documents. Nor are you limited to software-based art; *Illustrator*'s use of PostScript means that, if you have a Mac and a scanner, you can take any art that exists in print form and convert it very rapidly into something you can actually work with. And, since you're essentially tracing existing art rather than creating it from scratch, you can get very impressive results in minutes instead of hours.

Creating Illustrator Documents

If, in your youth, you spent any time with connect-the-dot pages in coloring books, *Illustrator* will seem familiar almost immediately. However, make no mistake — *Illustrator* is a powerful and fairly complex package, and you should plan to invest some time learning it. The screens include rulers for precision and a complex tool palette, both of which can be hidden for more drawing room. Probably most unnerving for the new user, *Illustrator* makes extensive use of the command, option and shift keys in combination with other keystrokes and mouse commands to perform various functions; eventually this becomes second nature, but your first few sessions will probably involve frequent reference to the manual for the proper incantations (Adobe, mindful of this problem, supplies a quick reference card listing the combinations and their functions).

When you import an image into *Illustrator*, it appears as a gray form, called a template, on your screen. Using *Illustrator*'s tools, you define

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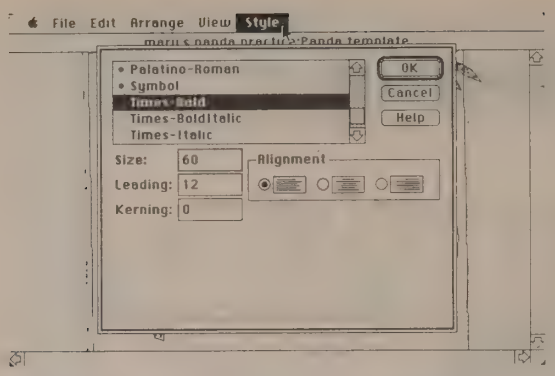
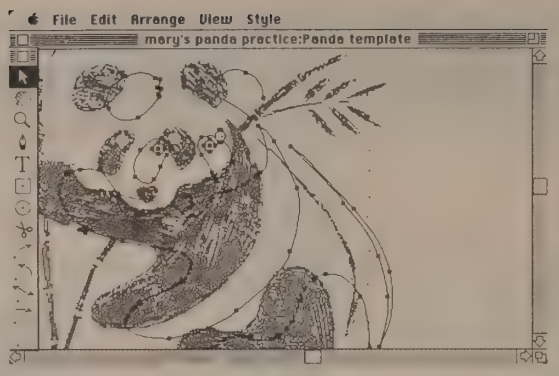
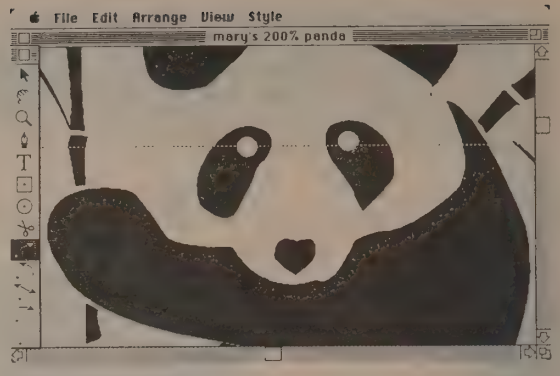


Illustrator also lets you place type anywhere in your drawing, and offers flexible leading and kerning options.



For convenience, a portion of your art can be selected, grouped, and moved out of the way. Putting it back can be unnerving, because response time is slow and there's a noticeable lag between mouse and screen movements.



Illustrator also lets you enlarge or reduce your illustration as needed, with no loss of output quality because the PostScript-based art is mathematically defined.

the shapes on the template by drawing a series of lines around them. At first this is a little awkward, between remembering the various mouse and key functions and dealing with the initial tendency of curves to run amok (the tutorial, for reasons best known to itself, waits till you're several sessions along before it tells you how to turn corners — i.e., make Curve #2 independent of the slope of Curve #1 — a bit of knowledge that would have saved a good deal of heartache and grief in the early lessons). Using the Zoom function, you can enlarge or reduce the template for better control.

Once you've defined the shapes, it's time to paint them. The paint menu offers many options — gray scales, black, white, and color (which will appear as shades of gray if your printer doesn't support color output). You can define the fill color as well as the color and width of the lines defining the shape (called "stroke"). You have considerable control of the appearance of the lines — not just point size and color, but also whether they're solid or dashed, and the appearance of corners and caps. Design elements can be layered, using different color fills and the Paste In Front/Paste In Back options.

For the sake of convenience, different parts of your graphic can be done separately. In the case of the example in the tutorial, the panda was done first, then selected, Grouped, and moved to the side to make the bamboo portions more accessible. Moving the image back onto the template is more unwieldy than it ought to be — the number-crunching required to move those graphics around as a unit slows response to a crawl, so that (at least with a Mac Plus and a hard disk) what's happening on the screen is several seconds behind what's happening with the mouse. It's necessary to stop periodically and let the screen chaos of multiple images subside so you can see the results of your mouse movements. (This was the only real performance problem I encountered, however.)

If you'd like to have some text with your graphic, *Illustrator* lets you place type anywhere in the work area. You have a choice of PostScript-compatible fonts in a wide range of sizes and faces (and if you don't have the font you need, Adobe has an extensive range of downloadable fonts for sale). You can also specify leading (the amount of space between two lines) and kerning (the space between two letters).

Once drawn, images can be duplicated, rotated, reflected and sheared (transformed into a diagonally-skewed image of its former self), either by dragging and clicking with palette tools and mouse or by specifying the appropriate angles and percentages in pop-up dialog boxes.

Also, and perhaps most useful, they can be scaled — reduced or enlarged to fit your requirements. Again you can achieve this by dragging or by specifying the percentage of enlargement or reduction. Different versions and sizes of the artwork can be saved separately for later use.

Be forwarned, however, that if you save a billboard-sized version of your artwork, you're going to have an interesting time trying to print it. *Illustrator*'s work area is 1008 x 1008 points, or 14 x 14 inches — which bears little resemblance to any paper size your printer is likely to accommodate. *Illustrator* subdivides (or "tiles") the image into pages conforming to the ones you specified in Page Setup. For instance, when the one-page panda image was enlarged 100% and printed, the result took eight pages.

Images can be placed in documents generated by other PostScript-based applications such as *PageMaker* or *XPress*. Because your image is PostScript-based, its quality will be the best your printer allows.

Comments

Whether you're an artist or a user who needs to use graphic elements in your work, you'll probably find *Illustrator* a godsend. Since it's fairly command- and terminology-intensive, you should expect something of a learning curve, particularly if you haven't spent much time with painting or drawing programs. However, the transition from hair-tearing to wondering how you got along without this product is fairly rapid. Once you're over the too-many-things-to-remember-at-once stage, you'll probably find that *Illustrator* opens up all manner of possibilities for enhancing your work.

In theory, you can use *Illustrator* with a Mac Plus and no hard disk. Practically speaking, unless you've got time on your hands and the patience of a saint, you need a hard disk and as much memory as you can get.

The *Illustrator* package comes with a program disk (copy protected, but Adobe sends you a personalized non-protected disk when you send in your registration card), a tutorial disk, and a videotape to introduce the user to the program's revolutionary capabilities. It also includes quick reference cards and an excellent manual. All in all, this is a well-conceived and well-executed package, and highly recommended. □

Adobe Broadens Its Horizons

"What software product have IBM, DEC and Apple all adopted?" rhetorically asks Jim Willis, Adobe's National Sales Manager. The answer — PostScript, of course.

Since its foundation five years ago, Adobe has done most of its business by licensing PostScript to OEMs of output devices. PostScript has become an industry standard, highly attractive to big-business customers because it offered a hardware-independent platform.

Last year, however, Adobe began marketing PostScript-based type faces, licensing them from their original vendors and distributing them to both OEM and retail customers. Says Willis, "We've become a typeface clearinghouse. We take other people's type faces, trace them with our technology — we spend many months on each typeface to make it as perfect as possible — and once they're done, they'll either go on ROM chips with PostScript in some of the OEM relationships, or they become downloadable typefaces, which we take to the retail marketplace."

Last year, software sales amounted to approximately $1 million. This year, thanks to the success of the *Adobe Type Library* and *Illustrator*, released in March, software is expected to amount to 30% of the company's estimated $37 million in earnings. The company now consists of two divisions — the OEM division, which continues to sell PostScript to manufacturers of output devices, and the software products division.

While historically Adobe has dealt directly with retailers, and will continue to do so with those who wish it, it's recently broadened its marketing approach by concluding distribution agreements with Softsel and Bonsu, two of the leading software distributors in the US. Additionally, while most of its dealers in the past have been Apple Authorized Dealers, Adobe is expanding its strategy to include not only IBM retailers but also software-only stores. However, says Willis, "Historically, it's not our policy to sell through mail order," largely because of the company's sense that it's not possible to offer adequate customer support through that channel. At the same time, Adobe has assembled a national direct-sales force capable of serving both corporate and retail accounts.

One fact that endears Adobe products to potential dealers is that they drive hardware sales. Willis cites the results of a recent survey of registered users: "Almost half the people who bought *Illustrator* bought hardware at the same time. Ninety-four percent of them had a scanner. Only 16% of those felt they needed a scanner to use *Illustrator*, but they felt it was such a productivity tool, that kept them from having to do all that freehand work.

"From a dealer's point of view," he adds, "that's exciting news."

As for what's on the horizon, Willis says discreetly that the company's examining its options. Certainly the DOS world is a new frontier for Adobe, and the advent of PostScript-based color printers is expected to have a dramatic impact.

In the meantime, he says, "Our strategy is that whatever we come out with, it's market-leading technology. We're not a me-too company." (Adobe Systems, P.O. Box 7900, Mountain View, CA 94039-7900, 415/961-4400.)

— Mary Eisenhart

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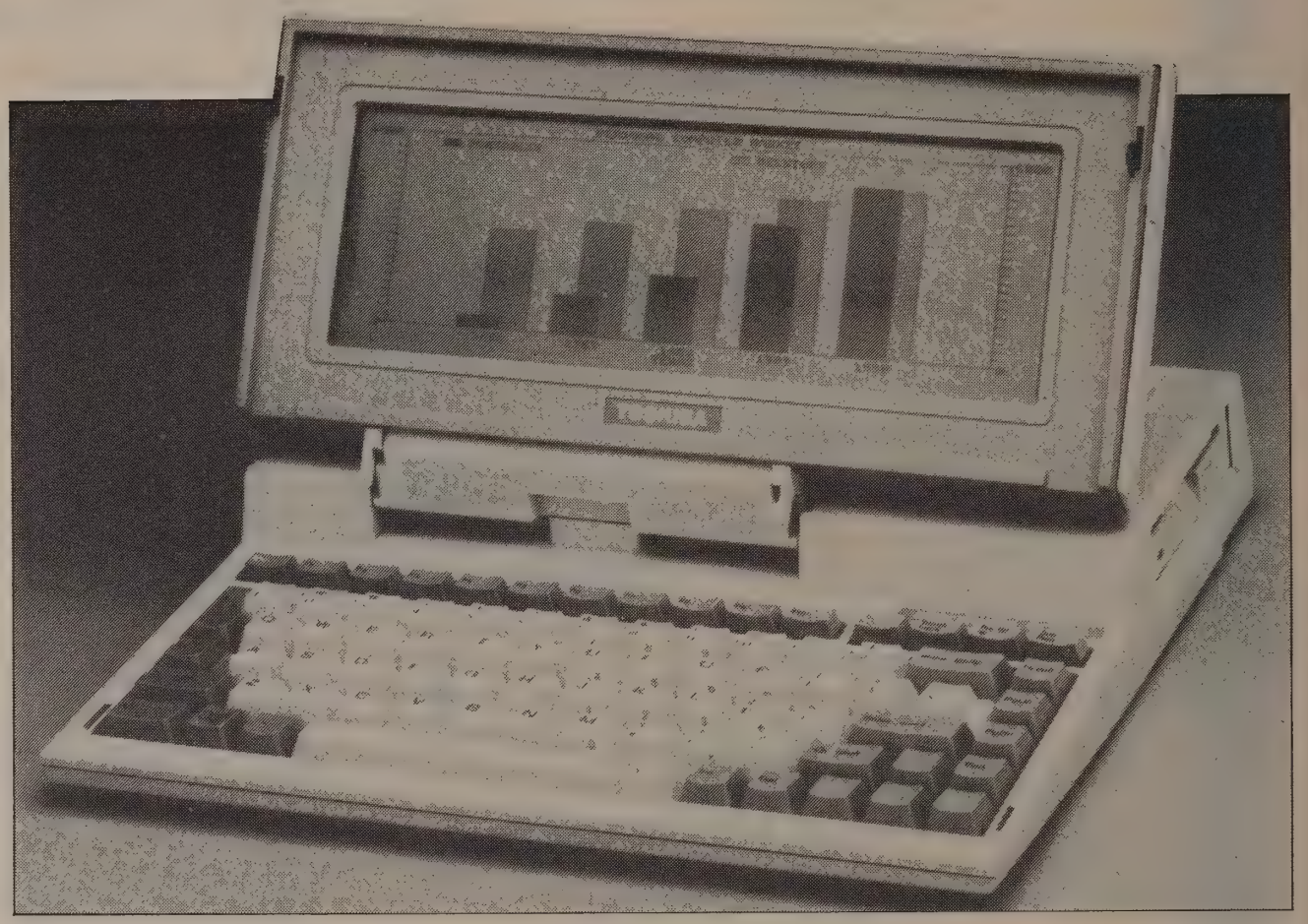
The Toshiba T1000 Laptop

A Full-Featured, Low-Cost Portable

By Jeff Spurrier



Just a few short years ago, industry pundits were declaring the laptop market dead, a good idea stillborn because of the lack of a user base, not-quite-there technology, and budget-busting prices.

Then Toshiba released its first two laptop computers: the T3100 and the T1100. Both featured plenty of power, a small lightweight package, and adequate screens. While both machines offered more power for the buck, they were still not cheap, and the imposition of tariffs by the U.S. Congress pushed up the prices of the dwindling inventory even more.

Well, don't fret. For those of you who revel in the idea of having a full-featured laptop that won't break your arm or your bank account, the lightest and cheapest Toshiba laptop is now in the stores.

The low end leader in Toshiba's laptop series is the T1000, a single 3½" 720KB disk computer with 512KB memory and an 80C88 processor (which is not affected by the current tariffs thanks to its 8-bit bus configuration). The T1000's list price is $1199, but some outlets are selling it for as little as $850, making it truly affordable for writers, students and businessmen-on-a-budget who need a traveling machine.

With dimensions of 12.2 inches by 11 inches by 2.05 inches and a weight of 6.4 pounds, the T1000 is the computer you can take with you just about anywhere. And with a hefty supply of interfaces included as standard (parallel, RS-232 serial, RGB, composite, external 5¼" diskette drive and numeric keyboard), the T1000 allows you to walk out the door and immediately start working.

Other standard features include an 82-key keyboard with a pleasant feel and function keys arranged across the top, a "Supertwist" LCD display (640×200) which is adjustable to a full 180 degrees, MS-DOS 2.11 in ROM, and a rechargeable battery which can last up to five hours (depending on how often the disk drive is accessed).

The processor runs at 4.77 MHz and clocked in at a perfect 1.0 using the PC Labs benchmark tests from *PC Magazine*. Under the ROM DOS 2.2, the fastest Toshiba disk access time of 1000 random sectors was 290.04 msec per sector (with no errors).

For those of you who revel in the idea of having a full-featured laptop that won't break your arm or your bank account, the lightest and cheapest Toshiba laptop is now in the stores.

Another standard feature (and a very welcome one) is Toshiba's Exceptional Care warranty, which gives you repair/replacement coverage for one year. If you have any problem with the machine, you can mail it back, and a loaner, which you have the option of keeping or using while your machine is being fixed, will be shipped out to you.

Finally, while these are not standard features, mention should be made of the Toshiba Tech support line (800/433-5999) and the Toshiba Technical BBS (714/837-4408). The people at the Tech Support line were extremely helpful and quick with their answers and suggestions. The Toshiba BBS was even more of a joy, with tons of downloadable software, advice, and comments.

Hands On

In my two weeks of playing around with the T1000, I could find nothing of major significance to complain about (which may not be true for users whose needs are different from mine—see below).

The screen was perfectly readable, and, while it was hard to see the cursor when working with a full 25 lines of text, changing the cursor shape (with CURSOR.COM) helped greatly. I found the keyboard a little mushy, and with all those keys crammed together in such a small space, it was hard to avoid mistyping. But like any new keyboard, after a few hours it felt much better once I was more used to it.

Relying upon only one drive, however, was something that took a little more patience. Having gotten used to having 20 megabytes of power at my fingertips, I found it somewhat annoying to have to be constantly switching disks when copying files or loading programs. But when you're only carrying around six pounds, some sort of trade-off is inevitable. And the convenience and

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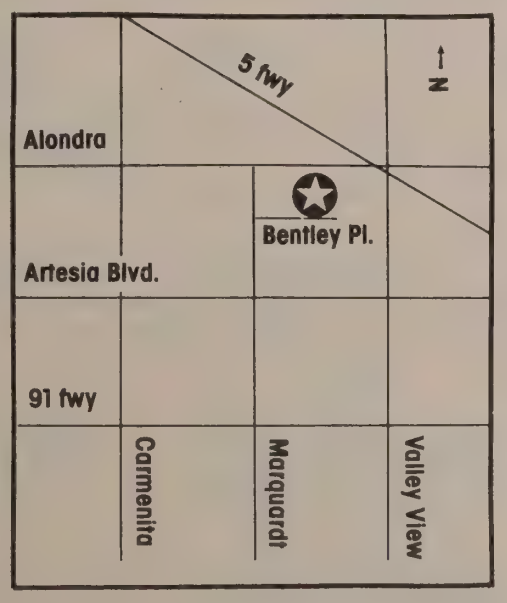

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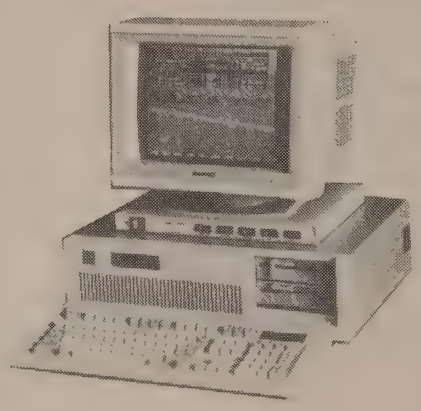

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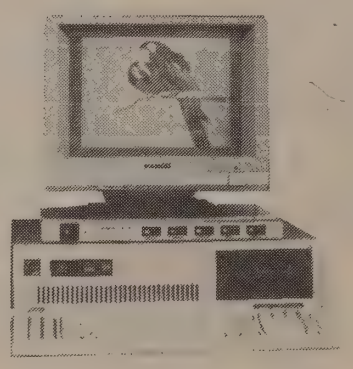

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Eventually there will be a whole new generation of scaled down affordable laptops, but for now, you can't go wrong with the T1000. If other machines are slow to hit the market, the T1000 could be the Model 100 of tomorrow.

720KB size of the 3½" disks really reduced the irritation factor.

And unlike my previous laptop machine (an old Epson Geneva CP/M laptop with 64KB RAM), the Toshiba gave me no problems with writing, composing, or moving text. With *Word Perfect* loaded into the Toshiba, I felt free to fly wherever my fingers took me. So far I've used the machine to take notes in the car in Little Tokyo, work on a story on the train to San Diego, and take notes while doing a phone interview at the *L.A. Times*. Never did I feel under-powered or over-burdened. (In fact, at the *Times*, I found the Toshiba much faster and more convenient than using the paper's massive mainframe system.)

And unlike my Kaypro PC (see below for more), the Toshiba's ports are all standard. Plugging my printer into the laptop produced instantaneous and perfect results.

The Downside

For all its size and generous supply of standard features, the T1000 is not the perfect laptop. There is no room for either a V20 chip or a math co-processor, and the 512KB memory limitation can be a real drawback (although with the optional 768B EMS card this can be boosted to 640KB). However, since I used the T1000 primarily for word processing and am used to the 4.77 speed of my Kaypro, none of these design glitches presented a major problem.

And then there's the problem of getting your desktop files onto the T1000 and vice versa. For most users this shouldn't be a headache. Toshiba sells a package called *Floppy Link* ($199) for this purpose, and there are other choices as well (*Brooklyn Bridge* and *Lap Link*, to name two). Those of you who have a Kaypro PC (as I do) will find it somewhat more frustrating. Because the Kaypro serial port is non-standard, getting the Toshiba to talk to my Kaypro was impossible. The only solution I've found after numerous calls to Kaypro, Toshiba, and the makers of *Brooklyn Bridge* is a 3½" drive for the Kaypro or a 5¼" drive for the Toshiba.

Finally, it would be nice to be able to tell just how much time you have left on your battery. Aside from the little red light that goes on when there's about ten minutes of battery life left, you're guessing just how much you've accessed the disk drive. An intelligent solution would be to have some software built into the ROM files which could illustrate with a bar graph how much time remains. Certainly someone will eventually upload a public domain file to the Toshiba bulletin board, but for now, being unpleasantly surprised at an inopportune time is a constant worry.

Options

When you're spending less than $1000 for a computer, you can certainly afford a few options. Among those offered by Toshiba are the EMS card, which provides 128K of user RAM and 640K of LIM-EMS (and is not exactly a bargain at $549, but may come down in price if the tariffs are dropped), an automobile power adaptor ($59), a 300/1200 Hayes-compatible modem ($399), a 5¼" disk drive (which seems far over-priced at $499 considering the going rate), an external 17-key numeric keyboard ($99) and DOS 3.2 on a 3½" floppy ($75).

The Right Choice

So now, with a whole zoo of new laptops hitting the market, there's a real choice for the laptop buyer. Datavue has the Spark (which is selling for about $999 locally), Kaypro has announced a new upgraded version of its laptop (for more than $2,000), Zenith and others have larger, more readable 5¼" machines, Data General has the new Model 2T, NEC has the Multi-Speed (which is incredibly fast and has a great screen), and on and on. But in its price range and size, the Toshiba has all the others beat hands down. Nothing is lighter, faster, cheaper, or has as many standard features.

Undoubtedly there will be a whole new generation of scaled down affordable laptops eventually, but for now, you can't go wrong with the T1000. If other machines are slow to hit the market, the T1000 could be the Model 100 of tomorrow.□

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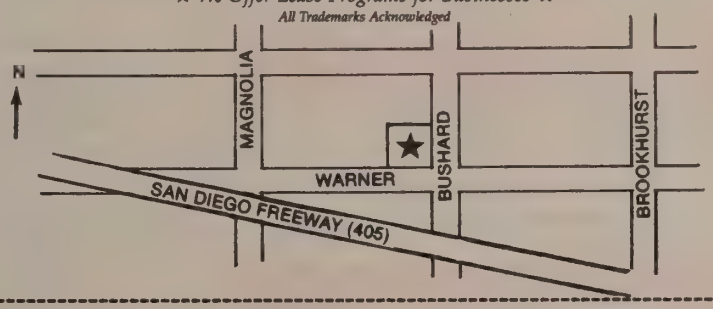

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The Datavue Spark is a low-cost portable with many desirable features and a few flaws.

The Datavue Spark

By Wayne A. Yacco

Using laptop computers allows users to perform most common business applications with nearly complete freedom of movement. They also open possibilities for new applications. The power of these new applications and the possibilities of performing old tasks in new ways is one of the lures of these machines, which are attracting managers, executives, and salespersons in droves.

The Datavue Spark is a very inexpensive and powerful laptop computer. It has features which could even let it serve as a desktop system in certain limited applications. There are some flaws too: at least one potentially major problem, which might be enough to keep some users from buying the Spark.

The Spark is one of two new entries from Datavue (the other is called the Snap). Datavue offers an extensive line of portable computers and is one of the companies held by a Master Limited Partnership called Intelligent Systems. The partnership owns several companies: Quadram, Peachtree, Asher Technologies, and Princeton Graphics, among others. They offer some of the more popular products on anybody's list.

First, A Few Flaws

Although the Spark has computing features which transcend the ordinary, its 9.54 megahertz turbo speed for example, some corners have been cut to achieve its low price. The battery pack, nearly half its full 640K memory complement and its second drive are all options. Add an internal, Hayes-compatible, 300/1200-bps modem and the low price begins to climb a little. It's still inexpensive, though, because the base price is only about $900. That's not the problem.

The difficulty is with another cut corner, the choice of materials used in the design of the display's hinge. When I first opened the unit, the friction hinge impressed me with its ability to angle the display panel precisely to the best viewing angle. It seemed like a design which would be relatively maintenance-free. After only a dozen or so cycles of opening and closing, though, it failed.

It might have been a fluke, I doubt it. What apparently happened is that the plastic case material, certainly chosen for its durability, failed to maintain its tolerances in the hinge. The friction hinge was simply too tight. That snugness placed too great a load on the rack and pinion mechanism. Then the display's grip on the hinge failed. The hinge may be a good design, but it needs to be made from a material which will maintain the dimensions required for free movement. Until that modification is made, it's possible that the unit may also lose its grip for other users.

To be fair, it is possible that I handled the display improperly, but my guess is that this hinge will cause problems for other users as well. If it was that easy for me to make a mistake handling the Spark, others will too.

Other aspects of the display are superior. Spark uses a super-twisted birefringent liquid-crystal display. It is easy to see even without the electro-luminescent backlighting option, and is easier to work with than other unlit displays, such as the NEC Multispeed's.

A second annoyance is the lack of separate lamps for drive access. The unit has two lamps, but one is dedicated to the external (and in this case nonexistent) drive. It should have been simple to use one lamp for each of the built-in drives and both lamps simultaneously for the external.

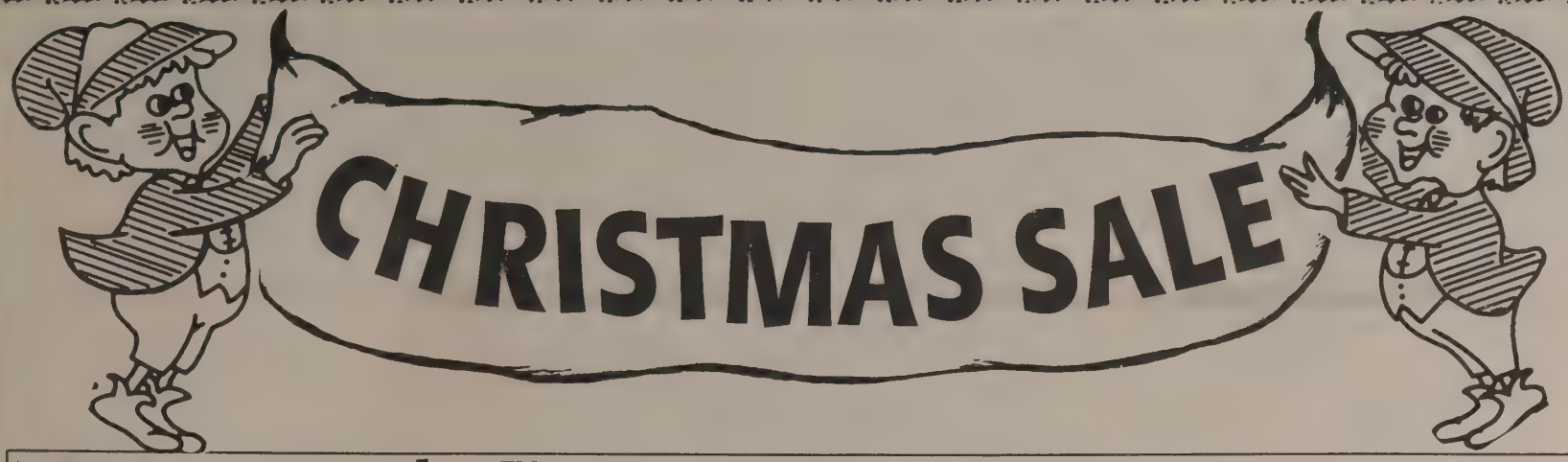
The power switch is on the side of the unit not far from one of the unit's drives. It is a rocker switch that some users will find all too easy to trip accidentally. I would much prefer a sliding switch that's a little harder to trip.

Finally, there is the DOS shipped with the unit. It's the old 2.11 with a modification that allows it to use the 3.5-inch drives. Like Xcopy and Append? Too bad, you'll have to use them at your own risk. DOS 3.2, the one supplied with machines like the Multispeed, seemed to work fine with the Spark until I tried to format some blank microdiskettes. It would only format them with 360K bytes of capacity. I used Xcopy with apparent success, but who knows? Could I trust it with really valuable data?

Features

There are many features which make this a desirable unit otherwise. In addition to its turbo speed, the nine-pound device includes a reset button, an RS232C port, a parallel port, both RGB and composite video outputs, an external floppy-drive port, a built-in clock and an external bus slot for attachment to an expansion box. An optional carrying case adds to the limited portability offered by the built-in plastic bail.

The keyboard has both tactile and variable audio feedback, and the home row is identified by raised dots on the F and J keys. As with most portables, this one suffers from the layout of the keys. The backslash (\) is difficult to reach, for example. There is also a special function key which is used to turn part of the alphabetic keyboard into the numeric keypad. The cursor pad also served dual functions via this key, alternat-



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ing between single movements and PAGE, HOME, and END functions. It was difficult to become accustomed to this, but ordinary text entry was a delight. The keys don't wobble like those on some other machines. Its feel is almost perfect: the first portable keyboard that I've used with the satisfaction I get from my IBM.

Documentation consists of a DOS manual and a simple user's guide. These are sufficient to answer most questions that a user will have, assuming prior familiarity with the IBM PC family of microcomputers.

Multifunction Laptop Software

The only software provided with the Spark is DOS. There are no ROM-resident utilities. In order to test the machine, I installed the *WordPerfect Executive* from WordPerfect Corporation. This application has been designed for laptop use. It includes essential support functions for an executive working in a limited-resource environment: on the road, without a desk, on a small machine.

Its word processor is identical to *WordPerfect* with the exception of certain absent functions. For example, the program has drivers for a large number of printers, but only one generic driver for laser printers. *WordPerfect* offers many more drivers both for laser and other types of printers. Fortunately it worked well enough with my Mannesmann Tally 910's emulation of the HP Laserjet+.

The program offers several other applications, including a spreadsheet compatible with *WordPerfect*'s companion product *PlanPerfect*. There is also a telecommunications module, a filer, and an appointment calendar. Applications are accessed through a shell that provides functions for the user without requiring intimate familiarity with DOS.

Remote-Application Control

Aside from offering portability for its own sake, there are actually new applications that are opened up by a truly portable machine if it retains a substantial portion of a desktop machine's power. One of these applications is the ability to operate systems remotely from a laptop, in the field, or from a branch office or home. The user could conceivably update a database from a commercial airliner. At the very least, the database might be accessed for price lists, perhaps to make an unexpected sale, without the assistance of anyone at the host site.

Carbon Copy is a program which allows the use of a local machine to operate a remote system. I was able to use this product to run several applications, including *Lotus 1-2-3*. Everything is controlled from the local machine and functions just as if the user was at the remote keyboard. The major difference is that any operation which requires the display of information on the console will have to display it twice, once locally and again remotely. The speed of the telecommunications channel, a modem for instance, will severely limit the speed of these transactions.

Display of information is not only slowed down, there is also a lag before it is displayed. A local directory listing can lag far enough behind a remote listing that it scrolls off the screen before becoming visible. Using Ctrl-Num Lock can temporarily pause the display long enough for the refresh to catch up. Directory listings on the 9.54 MHz. machine were slowed to a very slow rate of about one line per second by the combination of the software and a 1200-bps data link. Other functions, which take place largely at the host, are less affected. A file COPY takes about as long as usual.

Setting *Carbon Copy* to work can take some time. While it is not copy protected, it does require that two copies of the program be used. Each copy has a serial number, and the program checks to verify that they are different. There are also several factors which must be considered as with any telecommunications software that is used with a modem. *Carbon Copy* makes this setup particularly difficult because a separate installation program must be run to change ports, telephone numbers, transmission rates, and several other parameters.

Once all of the compatibility issues are solved, the program will work fine for that environment, but it may be necessary to repeat the setup if equipment is changed. The program can also be used with a null-modem cable. However, I was unable to successfully connect any of three machines (the Spark, Multispeed, and Vendex Turbo 888-XT) by cable alone. While some users might be discouraged by this failure, I take some solace in the inability of a technician from Meridian (*Carbon Copy*'s publisher) to connect either of these to laptops or a Zenith 181 by cable a few days earlier. My guess is that the problem is cable related, although I did try both a simple cross-over cable and a full-handshake null-modem cable.

One thing that I like about *Carbon Copy* is its use of special drive designators for performing data transfers between machines. Most migration software uses a convention of menus or simply adds a second machine's drives to the local complement. Thus, drive A: on the host may become drive C: on the local system. Confusing!

Carbon Copy affixes a prefix of H for the host or L for the local system. Drive A: on the host is clearly available as HA: It would be nice if some of the other programs which operate systems remotely, *Brooklyn Bridge* for instance, could adopt this method.

Since Datavue did not include the optional modem with this machine, I was forced to use an external device. The Pocket Modem from Migent is ideal for this application. It is about the size of a package of cigarettes, is powered by a nine-volt transistor-radio battery and attaches directly to the serial port with built-in thumb screws.

Aside from offering portability for its own sake, a truly portable machine opens up new applications if it retains a substantial portion of a desktop machine's power. One such application is the ability to operate systems remotely.

Memory Expansion

Many laptops do not have hard disks. Few have the ability to add options. Practically none can add an adapter without substantially losing portability. However, there are still ways to incorporate one essential add-on feature: EMS memory.

Spreadsheets continue to be one of the most widely used applications on microcomputers. For many users, the growing size of their spreadsheets has led to the purchase of memory-expansion boards. But these boards pose physical difficulties for laptop users.

There are, however, some software solutions for the laptop user which will provide the EMS memory required by *1-2-3* and other programs. One of these is *Above DisC*. Installing *Above DisC* allows programs, designed to use expanded memory (EMS), to use a hard disk drive, AT-type extended memory, or even floppy diskettes as firtual, or paged, memory.

I have used *Above DisC* in the past to convert extended memory on my IBM AT into expanded memory, and the performance was quite acceptable for most tasks. On a laptop with a hard disk, performance might also be suitable for a variety of jobs. However, when forced to employ floppy disks, the user will be well advised to limit applications to the essential. The speed of floppy-based EMS is unacceptably slow except in an emergency. Then, if you happen to be searching a large database of antidotes, just start praying instead.

Some applications will work better than others in these sparse-resource situations. *Lotus 1-2-3* is slowed down many times when forced to access the paged memory space. A large copy or save to another diskette can take several minutes while the media-based data thrashes in and out of memory.

Another limitation imposed by EMS software is its own overhead. The real memory available for *1-2-3* was reduced from 448,864 to 360,688 bytes to gain 720,544 bytes of EMS memory.

Other applications may not run on floppies at all. *SuperCalc4* may fail to work if used in its overlay mode. This is due to the lack of diagnostics in the *Above DisC* which can signal the user when a disk change is needed. If one diskette is dedicated to the largest possible memory (the only sensible configuration when there is a maximum of 720K available) and another contains a large file (if it were small, EMS wouldn't be necessary), then, there is no drive available for transferring *SuperCalc4* overlays into memory.

Using *Above DisC* on a laptop entailed some special preparation due to my inability to read the 3.5-inch microdiskette that developer TeleWare West provided. For some reason, two attempts to send me a 3.5-inch copy of the software both failed. Neither the Multispeed nor the Spark was able to read the diskette although I tried two machines, at two speeds each, with three versions of DOS. Finally, I used the *Brooklyn Bridge* to transfer a copy from a 5.25-inch minidiskette to the microdiskette. TeleWare West is planning to make *Above DisC* available for laptops and the PS/2, so, those problems should be solved by the time this appears in print.

Conclusions

Laptop portables are fun to use on the road and their attraction is sure to grow as they fall even further in price. But, though they certainly beat the alternative (no PC), they are a long way from perfection. Part of the reason is that this is an area in which IBM has not assumed a strong leadership position. Because the Convertible was a weak entry (despite whatever success it enjoys as a product), the competition in the market has not been strong enough to force laptop machines to excel. Only among elite machines like the Grid and Toshiba T3100 does one expect to see all of the *t*s crossed and *i*s dotted. □

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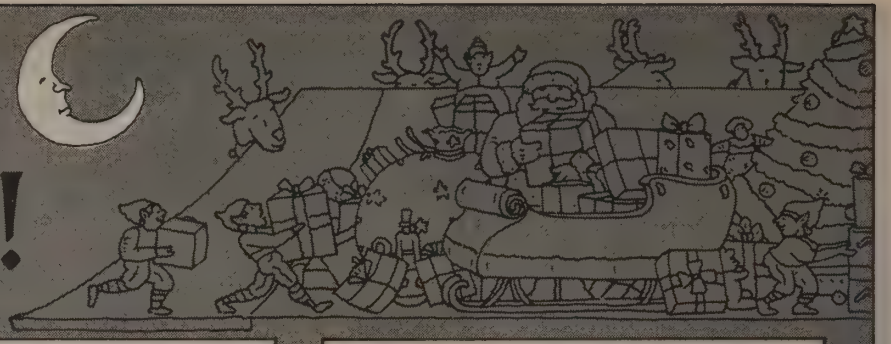

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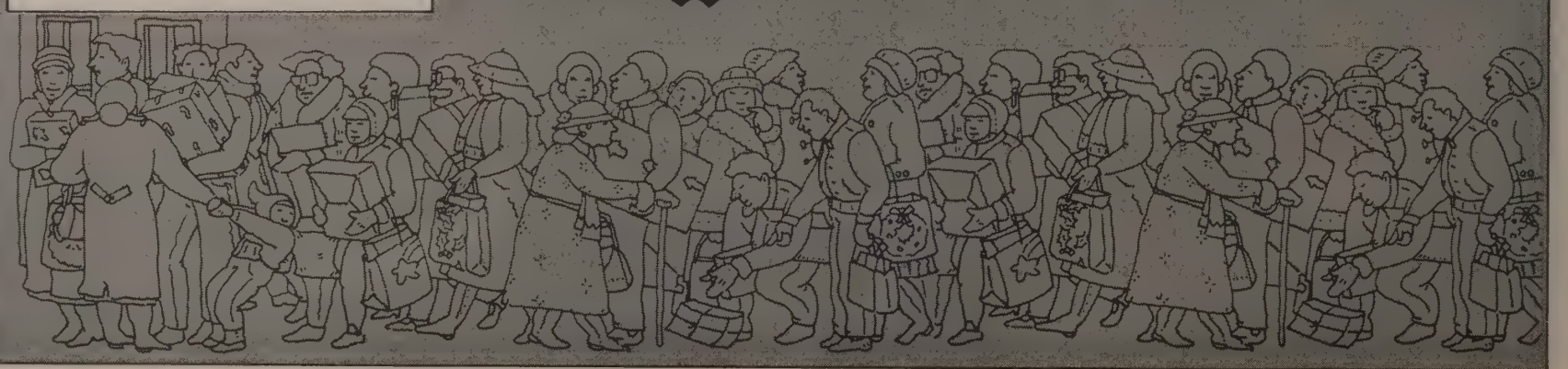

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From The Land Down Under: Tracker

By David Batterson

Tracker grows with you, and has many sophisticated features. You can print reports on companies, print mailing labels and phone lists, and create a data file for mail merge for your particular word processor.

Most of us have seen or used desktop organizer programs, which include a calendar/datebook, electronic notepad and a calculator. The problem with these organizers is that they fail to live up to their promise. They look good in the manual and have spiffy screens, but usually are not very practical. After playing with them a few hours, we toss the disk into the back of the storage tray, along with *Tune Trivia* and *PC-Dial*.

From the wilds of Melbourne, Australia comes a new contender called *Tracker*. The name derives from the Aboriginal tracker who "can track anybody or anything over any terrain," says the manual.

The best test for a reviewer is: will I use this software after I finish the evaluation, or does it join the ranks of *Pong*? The second question is simply: does the program deliver the goods?

After spending many hours with *Tracker*, I have to answer yes to both.

Tracker is referred to as the "Interactive Filing and Prospecting System." But it is not just another ho-hum electronic address file. No one is going to buy those anymore!

Installation

Before looking through the features, let's look at the easy installation. Often you have to create CONFIG.SYS and AUTOEXEC.BAT files for new software. (Many of us know how to do this, but for the newcomer it can be a pain.)

These terms do not even appear in the manual. You simply format your disks, making your program disk a bootable one if you prefer, with the FORMAT B: /s command. To install, you type a word that sounds like a metal shack: TINSTALL. Follow the onscreen instructions and you're done. Setting up for hard disk is even quicker.

You can go ahead and run *Tracker* at this point to get familiar. But it is best to run the setup, with the easy-to-remember name of TSETUP. (These Aussies don't like computerese, I can see. Good for them.)

This is where you select screen type, printer, data filenames, and so forth. The default settings will work in most cases. For Auto-Dial, it defaults to 300 baud, so most will want to change that to 1200. And No parity, 8 data bits, 1 stop bit settings will work for most users.

One setting is very important or the Auto-Dial will not work: either Parallel or Through Modem. The manual is confusing in this area. I set my system for Through Modem (phone plugged into modem; modem connected to wall). This didn't work.

I switched it to Parallel (phone and modem connected directly to wall) and it worked. This did not make sense because my setup is through the modem, *not* direct. But I had no further problems. So just try both settings.

You can run *Tracker* as memory-resident or non-resident. If you want to use it as a pop-up program that you can access while running your spreadsheet or word processor, you have to put it into memory. I recommend this setting; otherwise you have to keep running the program every time. You pick a key of your choice, which is used with the ‹Alt› key to access it.

The manual does have a caveat: "*Tracker* may not work with all programs when it is in memory resident mode." This is because some programs like *Lotus 1-2-3*, etc., are memory hogs. You'll have to test it with these.

Another option to change in the setup is Field Names. For now, leave it as is. You can customize this later to your particular needs. Hit the End key, and your new setup is saved to disk.

Type *Tracker* at the A› and let's look at what it can do.

Operation

Everything is menu driven. You highlight your choice with the cursor arrows, and select one. Start by inputting names and addresses, with Insert-new, or just type I (it works faster). When done, hit End, and insert the next one. No problems!

Thorough onscreen help is available with the F1 key. Now you'll want to enter notes — comments or data on the individual customers or clients in your database. They are dated automatically with today's date. (While writing this, I received a phone call; I hit Alt-T and added a note to a publication I write for. Then End, and back to writing!)

Tracker grows with you, and has many sophisticated features, some of which you may not ever use. For instance, you can print reports on companies (selected by keywords), print mailing labels and phone lists, and create a data file for mail merge for your particular word processor (seven popular types included).

Remember the field names in TSETUP? Now you may want to change these. For instance, the main menu has "company name." I changed that to "publication," and "product" to "subject matter." Customize it any way you want. There are many suggestions in the manual. You can change it to a project planning screen, or one for personnel records. A receptionist could use it to log phone messages (which can be printed out later).

A few minor flaws: the manual's mail merge explanation uses an Australian address format, and should be rewritten for U.S. usage, i.e., city, state and zip all go on one line, not two. In the notes section, you cannot enter a quote (") and must type ' instead.

When you first run *Tracker* each day, you must hit the F5 key to see what appointments/contacts you have that day. An improvement would be for this to do so automatically.

A free demo disk is available for those interested in *Tracker*. The minimum requirements for using the program are: PC-DOS/MS-DOS Version 2.0 or later, 256K RAM, two floppy disks or hard drive, monochrome or color monitor, Hayes-compatible modem (to use the phone dialer) and your own printer and word processor. As the generally well-written manual says: "Warning: *Tracker* is addictive." (*Tracker* Version 2.0; $99 suggested list price, not copy protected. Adaptive (USA) Inc., 3701 Birch Street, Newport Beach, CA 92660; 714/852-1467.)

David Batterson is an independent writer in Los Angeles who writes for various computer publications. He can be reached via MCI Mail: DBATTERSON. *Copyright 1987 D.W.B.*

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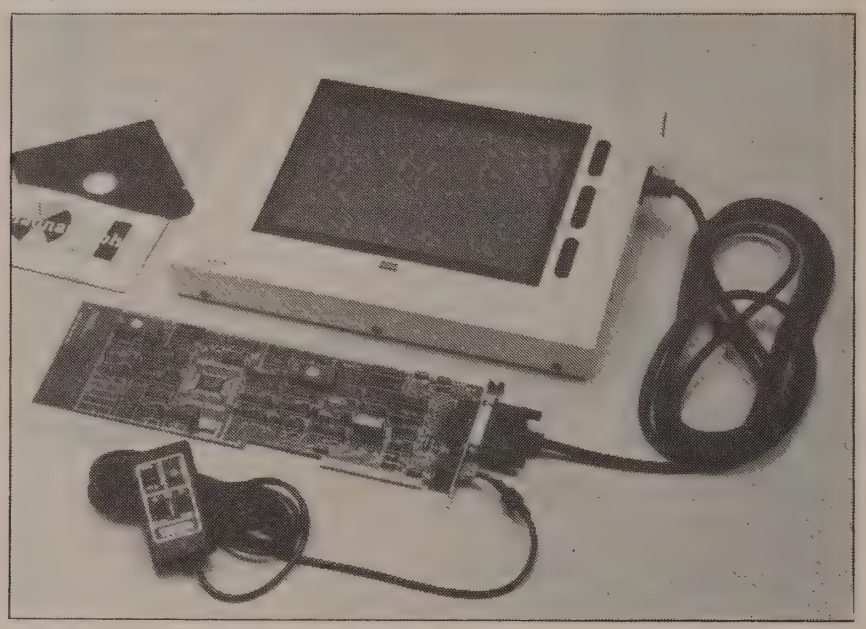

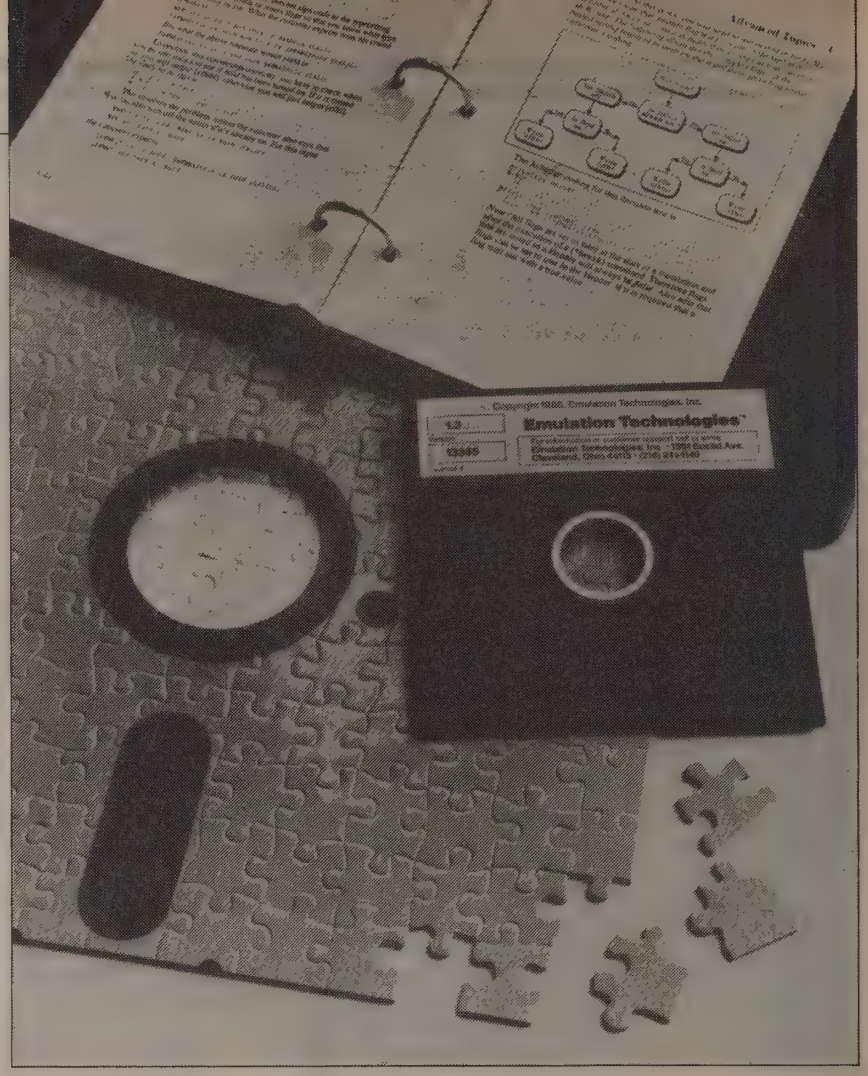

Xchange Makes Sending Copy Off To The Typesetter Easier

Xchange from Emulation Technologies is a software package that provides "no-hands" document markup for desktop publishing and typesetting. *Xchange* recognizes the formatting native to a word processor and responds to it by producing a document marked up for virtually any page description method used in desktop publishing. As a typesetting tool it can convert word processor formatting codes directly into the appropriate markup or command codes for several computer typesetting systems. It can also convert information from any file format or data type into nearly any other file format or data type. ($495) Emulation Technologies, Bulkley Building, Lower Level, 1501 Euclid Ave., Cleveland, Ohio 44115. (216) 241-1140.

WonUnder Adds An Expansion Card To Your Toshiba T3100 Laptop

The WonUnder is a single card expansion unit for the Toshiba T3100 portable computer. It allows any 2/3 or smaller sized card to be mounted on the bottom of the laptop. The WonUnder includes a sturdy metal card carrier and an interface card that plugs into the T3100's expansion port. It supports network interface cards such as Arcnet, Ethernet, Proteon and Starlan. It also provides support for mainframe terminal emulation cards such as the CXI 3278 coax card. The WonUnder has the same gray color and finish as the Toshiba and fits in the laptop's cloth carrying case. ($349) Connect Computer Company, Inc., 9855 West 78th Street, Suite 220, Eden Prairie, MN 55344. (612) 944-0181.

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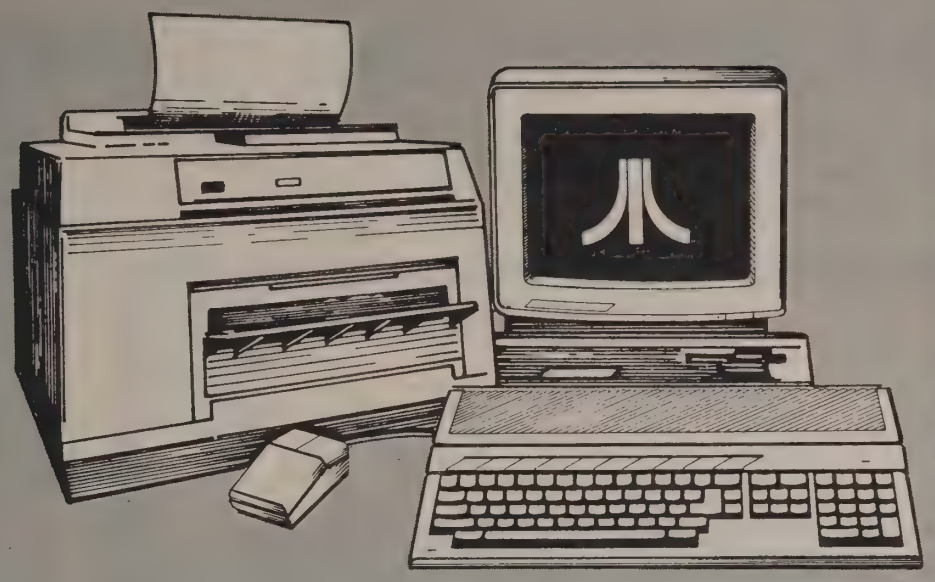

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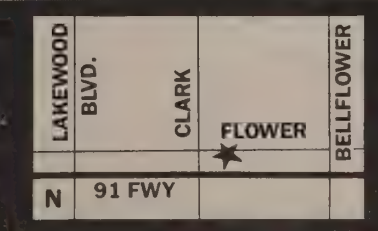

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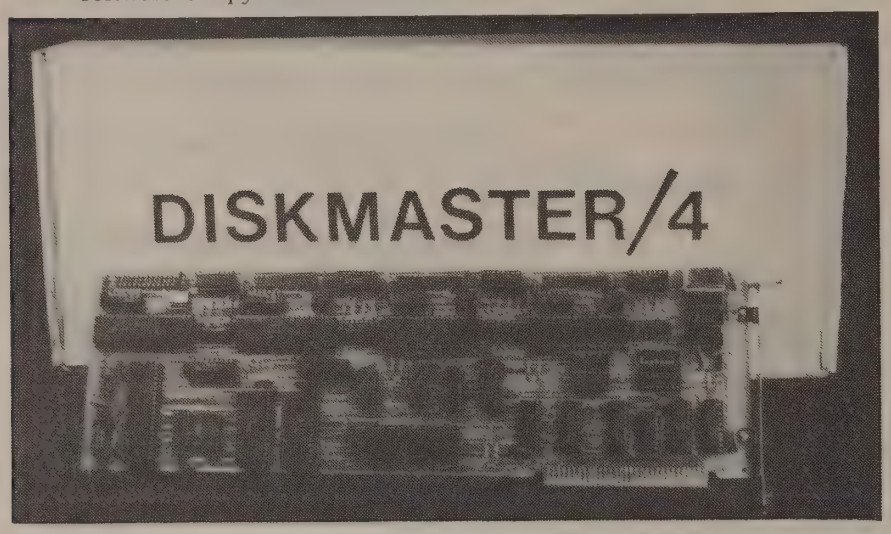
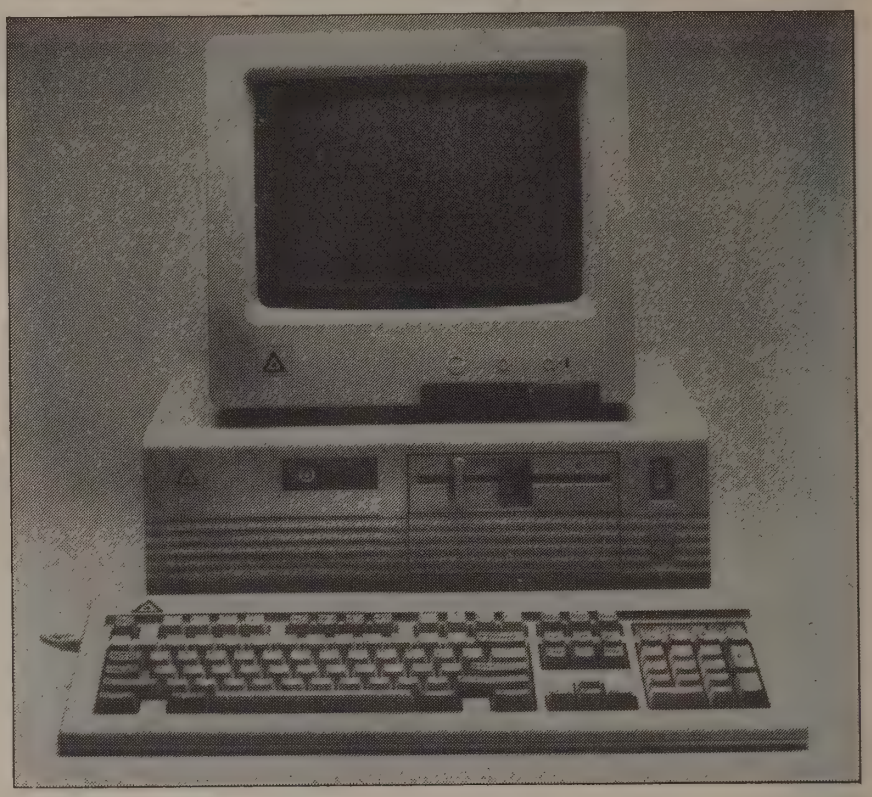


It may also be purchased with four 5-1/4" or 3-1/2" drives, case and power supply. Expansion to eight drives is easily accomplished by adding another Diskmaster/4 and four more drives to copy 400 disks per hour. Custom software is available and recommended. Prices start at $1,495. Disk Storage Technologies. 333 Cobalt Way, Suite 107, Sunnyvale, CA 94086. (408) 735-7662.



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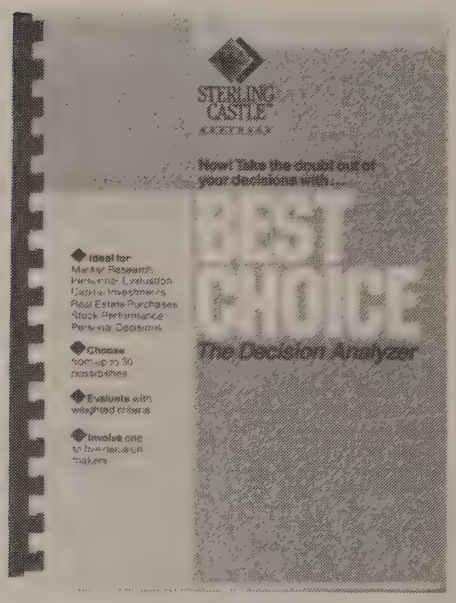

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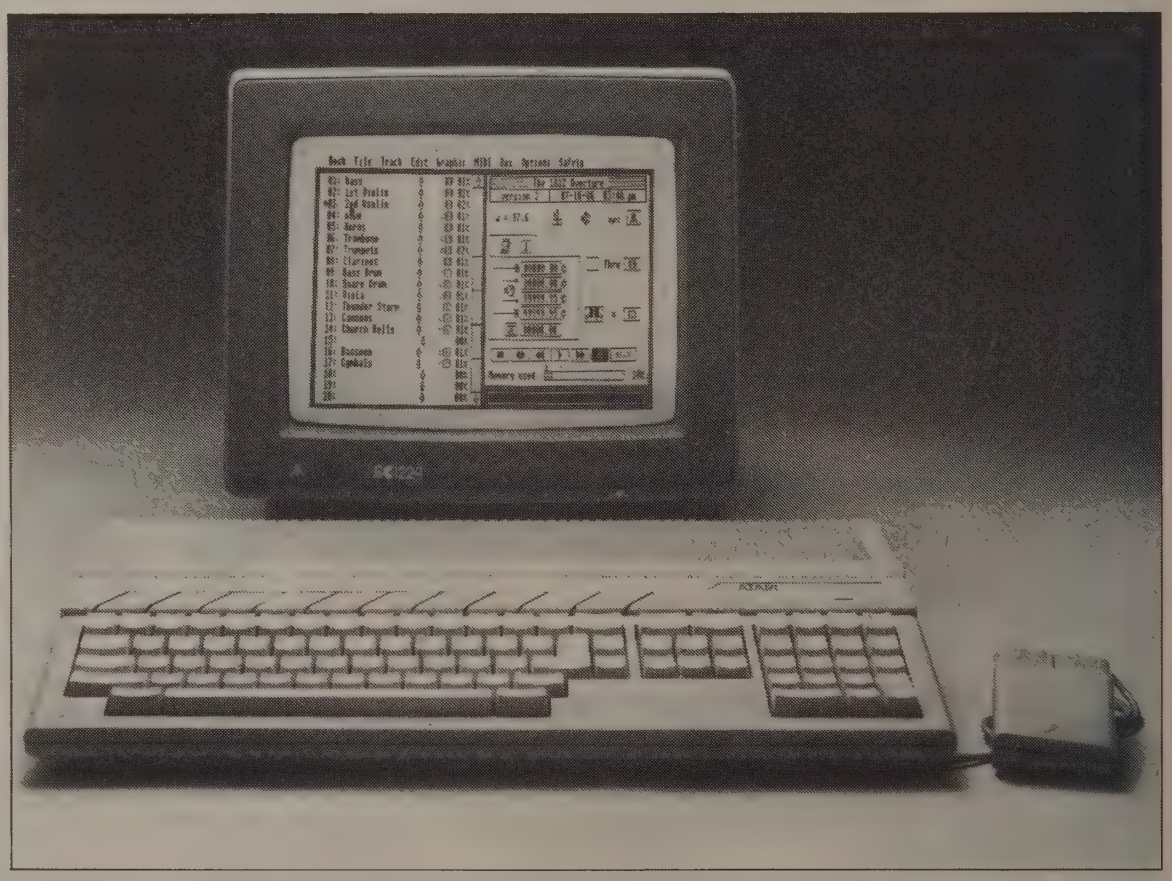

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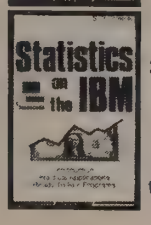

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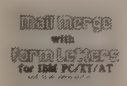

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Fast Track Tradeoffs: The Legacy Of 9600-bps Modems

By Brock N. Meeks

When Mike White decided it was time to upgrade his bulletin board system to 9600-bps he ran into one small catch: his BBS is actually a 20-node system with international capability (including a WATS line). And the $1,000 (average) price tag of most dial-up 9600-bps modems didn't help matters.

"Suddenly I wasn't just considering an upgrade," says White, a script writer for the Fox Broadcasting Network, "I was staring down the throat of a substantial investment." So he did what any enterprising sysop would do — he bought 147 9600-bps modems.

White, buying in such high volume, obtained a special deal from US Robotics (USR) on the HST 9600-bps modem. "I figured if I was going to be crazy enough to buy 20 (9600-bps) modems, then I might as well buy all that USR would sell me," he said. "Putting a 9600-bps modem on each node essentially gave me a 9600-bps point to point network. But I not only wanted that speed between each node, I wanted to make sure others could take advantage of my upgraded system, too. So I sold all the other modems to local sysops and users." When word of the deal hit the streets, White sold out in five hours. The small profit he made on each modem more than paid for upgrading his system.

9600 Extremes

White's experience is actually right in sync with a growing trend: the sale of 9600-bps modems to users of desktop PCs. IDC, a market research firm, predicted such a trend early last year.

The IDC report states that from 1986 to 1988 there will be an 80 percent increase in the number of dial-up 9600-bps modems sold. The report also notes that, in 1986, 9600-bps modems commanded the largest share of the entire modem market (30.9 percent) in terms of total revenue. The main reason: most of these modems weigh in at a hefty four to six grand. However, the 80 percent forecasted increase didn't apply to these high priced modems, but to a new breed of 9600-bps modem costing much less.

These dial-up 9600-bps modems will likely end up tethered to desktop PCs — not the corporate mainframes of their high priced cousins. They are designed to operate over the normal two-wire voice grade telephone lines, as opposed to four-wire leased lines. But why, when most people are *still* running modems at 300/1200-bps, should these high-speed desktop modems suddenly command center stage?

Brock Meeks is a San Diego-based freelance writer and columnist for several magazines. This article was uploaded to his editor at the plodding rate of 1200 bits per second.

Although the low end 9600-bps market is based on the same standard, it is anything but "standardized." Each manufacturer implements the standard in a different way, mainly by using proprietary error correction protocols. This creates havoc in the marketplace.

Tradition

Traditionally, the majority of 9600-bps modems are used on four-wire, leased-line networks. These are typically private networks — set up by financial services or multinational corporations — that must have constant access to their network. In other words, the modem is *always* online. This allows immediate access to the network for information retrieval or for transferring data. Because of their complexity and "bullet proof" design, these "network" modems wear high price tags.

Today, several manufacturers are challenging the "traditional" image of these high priced speedsters. Hayes, USR, Racal-Vadic, and others, are selling dial-up 9600-bps modems, aimed at individual users, at one-sixth the price of the network 9600-bps breed.

Why the big price spread between the network modems and those being sold to end users? As it turns out, not all 9600-bps modems are created equal; the newer dial-up 9600-bps modems don't have to meet the same exacting standards as their expensive corporate counterparts.

Standard Differences

The difference in the 9600-bps market lies in two separate standards, V.29 and V.32, as recommended by the Consultative Committee for International Telegraph and Telephone (CCITT), an international standards setting committee.

The V.32 standard is generally considered the "true" standard because it specifies such modems must have a simultaneous transfer rate of 9600-bps in both the send and receive direction. (In technospeak the phrase goes something like: "synchronous, full-duplex, 9600-bps throughput.")

Without diving into heavy technical details, suffice to say that the V.32 standard is immensely complex to implement, primarily owing to a technology called "echo cancellation."

Because V.32 modems move data at high speeds, simultaneously and in both directions, they use 90 percent of the available telephone bandwidth. When this happens the send and receive signals cannot "pass" without bumping into each other. This "bumping" causes an echo effect. Echo cancellation technology enables these modems to decipher the correct signals or "filter out" the echoed (overlapped) data.

A helpful analogy is to think of the telephone line as a two-lane highway. Traffic flows in both directions simultaneously; but to carry increased traffic during rush hour, highway designers must either increase the number of lanes in each direction or widen the two lanes to accommodate erratic drivers and provide a margin of safety. Unfortunately these options aren't available to modem designers; there is a fixed amount of "lane space" inside a telephone wire.

Echo cancellation is the most sophisticated way of dealing with the limited telephone bandwidth. Unfortunately, it substantially increases the cost of the modem.

Another way to overcome this cramped bandwidth is to use the CCITT V.29 standard. This is the same technology that all modern facsimile machines use. It assures reliable 9600-bps operation, but only in one direction at a time. All "low end" 9600-bps modems use this standard.

In our highway analogy, the V.29 standard moves all the traffic in one direction for a certain amount of time, stops, then moves the traffic in the other direction. Because there are no overlapping signals, echo cancellation is not needed, which makes it possible to lower the price of the modem.

It should be added that all 9600-bps modems, regardless of the standard they use, are compatible with lower speed modems.

Can We Talk?

Although the low end 9600-bps market is based on the same standard, it is anything but "standardized." This is because each manufacturer implements the standard in a different way, mainly by using (hardware based) proprietary error correction protocols. This creates havoc in the marketplace; presently all V.29 9600-bps modems are incompatible.

Apparently the "real world" market is ignoring

such incompatibility. An excellent example is the application implemented by Security Pacific National Bank in San Diego, CA.

When Steve Harrison, MIS/DP manager for Security Pacific, needed a fast answer to a "data traffic jam" he turned to a V.29 9600-bps modem. The problem revolved around the need to speed up data transfer from the bank's mainframes to an off-site storage system. Previously, the system ran on 2400-bps modems. As the number and size of these uploads increased, Harrison found them running into the next pre-timed delivery. The file transfers were too big to be handled efficiently at 2400-bps.

"We simply outgrew that data rate," Harrison says. He needed a fast answer, and turned to the Racal-Vadic 9600-bps modems without hesitation. "As long as our corporate modems could talk with the off-site modems, I didn't much care whether anyone else could talk to them."

Such applications problems demand decisions that create a standard, rather than waiting for one to emerge. "It's a 'standard by edict,'" Harrison says.

But Can You Type?

There are two areas where high-speed dial-up modem performance is crucial: bulk file transfer, as in the Security Pacific case, and interactive or "dial up" applications.

Human factor engineering shows that people can tolerate only a small amount of delay between the time they enter a keystroke and the time their entry is echoed back to their screen. The upper level of this "tolerance" is 200 milliseconds or 1/5th of a second. Any delay over 200 milliseconds is detrimental to performance (not to mention patience). This "round trip" delay time is a major criterion for judging a high-speed modem.

Remember that these modems "flow" at 9600-bps in one direction at time. During one-way file transfers, such as downloading from a BBS, these modems can achieve an average transfer rate of 8,000-bps. (The less than optimal speed usually results from errors introduced by noisy telephone lines.) However, an interactive session requires a 9600-bps burst, in both directions, for every keystroke. (You type and the remote systems echoes, each at 9600-bps.) Such turnarounds are commonly referred to as "ping-ponging."

Other V.29 9600-bps modems dedicate the remote-to-user link to a speed of 9600-bps. But because these modems can't operate at 9600-bps in both directions, they regulate the user-to-remote link to only 300-bps. And although these modems don't have to deal with the delays incurred by ping-pong modems, there is significant extra delay imposed by noise on the 300-bps channel, reducing signal from the remote computer to less than 300-bps.

Just what kind of effect does this have on the tolerance" level of 200 milliseconds? Plenty, according to a study by Racal-Vadic.

The Racal-Vadic benchmark shows that on typical long-distance phone lines, the average interactive delay time (of the three 9600-bps modems tested, including their own) ranged from 204 milliseconds to 270 milliseconds. Clearly, these dial-up modems are not meant for intensive keyboard pounding.

Worth Their Weight In The Bottom Line?

Is there a 9600-bps in your future? The answer is a definite "maybe."

Few interactive sessions, beyond the full-screen editing done by remote programmers, are practical or necessary at 9600-bps. This given cancels out the borderline interactive effectiveness of the modem. Also, consider that very few online services are offering 9600-bps service. Where these modems really shine, however, is in the file transfer arena.

If you spend a lot of time downloading software from BBSs, it might be to your advantage to consider a 9600-bps modem. USR is successfully wooing sysops by offering them the HST 9600-bps modem for only $495. If that strategy works, BBSs all over the country will be upgrading to 9600-bps, giving you a great excuse (or at least a rationalization) for upgrading to 9600-bps.

And for networking? Imagine thousands of Fidonets (or similar systems) running at 9600-bps. Suddenly a network emerges that approaches the coverage, speed and efficiency of the world's fastest private networks; "global interconnectivity" — an economic fantasy at this point — becomes more than a mere pipe dream.

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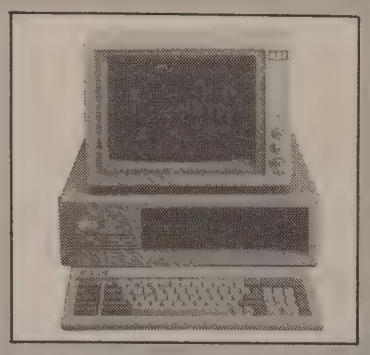

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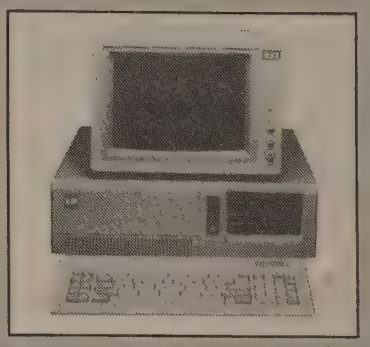

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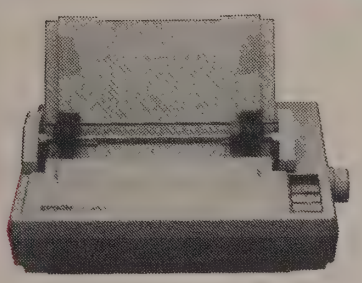

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The Tao Of AWK

By Bennett Falk

With a furrowed brow, Hapless User approached the UNIX gurus. "Do any of you know an editing command to switch two words around?"

The gurus knew by now that this was probably not what Hapless really wanted to know, and upon further questioning it came out that Hapless was trying to edit several very large files containing a mailing list in which the "phone number" and "date of birth" columns were swapped. Hapless was supposed to load the contents of these files into a database, but could not do so because the data types for birthdate and phone number were incompatible.

The gurus looked at the printout Hapless waved distractedly in front of them.

"Oh," they said, "you can fix this with an awk script."

"Awk script?" Hapless replied.

Most UNIX utilities are pretty specialized, like "grep." Grep is basically a one-job tool — it finds a pattern in a file and prints each line on which the pattern occurs.

"Awk script. See, your data files look like this:

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There are eight fields in each line, and each field is separated from the next by a pipe sign ('|'). All you want to do is transpose columns seven and eight so the birthdate comes after the phone number in each line of your data, right?

"Right."

"Use this."

The guru scribbled something on a pad of paper. It looked like this:

```
awk 'BEGIN {FS="|"; OFS="|"{ \
{dummy = $7; $7 = $8; $8 = dummy; print
  $0}' filename
```

Hapless went back to his terminal, unquestioningly typed in the formula and pressed return. To his great surprise it worked. Excited by the efficacy of the little program, he went back to the gurus:

"Teach me about awk. What kind of thing is it?"

"Well," the gurus replied evasively, "that's a tough question.

"Awk isn't really like anything else in UNIX. It was created in 1977 by Aho, Weinberger, and Kernighan, and has had an uphill battle for recognition among UNIX utilities ever since. It was revised a couple of years ago, but since not many people knew what awk did in the first place, the new, improved version hasn't turned many heads.

"Most UNIX utilities are pretty specialized. Like 'grep,' for example. Grep is basically a one-job tool: it finds a pattern in a file and prints each line on which the pattern occurs. That's all it does: find things and prints them. Awk is just much more general."

"I don't understand."

"Have you read the manual?" the gurus replied, as evasiveness gave way to impatience.

"No."

"Go meditate on the manual, then ask your questions."

Hapless read the manual and *The AWK Programming Language* (Addison-Wesley, 1987), a book by the authors of the awk program. He learned that awk was a "pattern scanning and processing language." This brought him no closer to understanding what awk was, but he soon began to understand how to use it.

He learned that any awk command line could consist of three parts: the word "awk," a program or list of statements to be executed, and the name of a file or files on which the program would be run. Awk would read its input one line at a time and apply the program to each line.

Short programs, like the one the gurus gave him, could be included on the command line enclosed in single quotation marks. Longer programs could be stored in a file.

Hapless discovered that creating awk programs required a fair amount of programming skill. The program he'd been given by the gurus contained two instructions:

Each awk instruction consists of two parts, a pattern that awk looks for in its input and a list of things to do whenever that pattern was encountered.

```
BEGIN {FS="|"; OFS="|"}
{dummy = $7; $7 = $8; $8 = dummy;
  print $0}
```

Each instruction consisted of two parts: a pattern that awk would look for in its input and a list (always enclosed in curly brackets) of things to do whenever that pattern was encountered.

In the first line of the gurus' program, the word BEGIN was the pattern. This, Hapless read, was one of two special patterns (the other being END) to process instructions before and after reading any input. In the second line of the program, Hapless was surprised to see that there was no pattern: this meant that the instructions on this line were to be applied to every line of input.

The manual discussed the pattern portion of awk statements at great and sagacious length. Hapless realized that such patterns could be quite complicated, that they might include "regular expressions," such as grep might use, and built-in variables to identify things like line number, line length, or the number of fields in the line.

So far, so good. But what were these mysterious instructions? In the guru's programs, most of the instructions included in the command portion of the statements just assigned a value to a variable. The instructions in the first statement, FS="|"; OFS="|"}, just identified the pipe sign ("|") as both the input field separator (FS) and the output field separator (OFS). Both FS and OFS are built-in variables for awk, and their default value is " ", the space character.

The second statement performed three variable assignments to swap the position of the 7th and 8th fields in the input line, and then printed the entire line. "Dummy" is a user variable in

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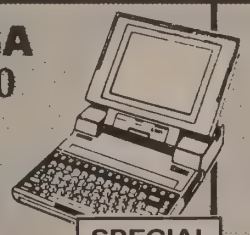

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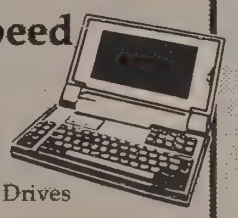

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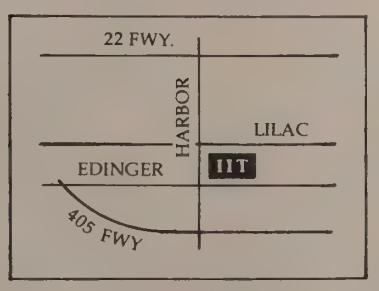

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the guru's program. Like all variables in awk, it is created just by being assigned, there's no need to declare what type of data (character or numeric, for example) it will store. The instruction "dummy = $7" copies the contents of the seventh field in the input line to the variable "dummy." "$7 = $8" copies the contents of the eighth field of the input into the seventh field of the input, and "$8 = dummy" copies dummy's contents into field eight. The instruction to print the entire line is "print $0."

This just barely scratched the surface of what could be put in the instruction portion of an awk statement. Obviously there were functions to manipulate text, but Hapless was surprised to learn that there were also arithmetic operations and functions. There were commands to control input and output between awk and files or between awk and other programs. Finally, there were "flow of control" statements (like "if... else" and "do...while") to manage the sequence of actions when things got complex.

As Hapless looked at the flow of control statements, the light began to dawn:

"This stuff looks a lot like 'C.'"

And, indeed, the syntax for all the flow of control commands was taken straight from the "C" language. When he found out that newer versions of awk would allow him to write and call his own functions, his intuition was confirmed: awk was essentially a "C" interpreter.

Now, Hapless had a long-standing grudge against all compiled languages, and against "C" in particular. He resented having to learn how to manipulate a compiler and linker in addition to mastering the rules of the language itself.

Awk has functions to manipulate text, but there are also arithmetic operations and functions, commands to control input and output between awk and files or between awk and other programs.

In awk he saw a tool with which he could write short, "C"-like programs to do what he needed. Hapless was ecstatic. He started to run back and tell the gurus of his discovery, but stopped short. He could imagine them clucking with disdain and asking sarcastically for proof. How could he possibly prove that awk was a kind of "C" that needed no compiler?

Disheartened, he went back home, and drowned his sorrows reading old *BYTE* magazines.

As it happened, one of the issues he leafed through was July 1987, which contained a reprint of the source code of for the "Sieve of Eratosthenes" benchmark in a staff-written article entitled "High-Tech Horsepower."

Hapless mused idly about the possibility of writing the sieve benchmark in awk. He went to his terminal and typed in the program as shown in Listing 1. He compiled and ran his version. Just over five seconds were required to run one hundred iterations of the loop that found all the prime numbers between 1 and 1024.

He then started adapting the C code for awk. To his surprise, it took only a few minutes. His awk version of the "sieve" program is in Listing 2. He ran it with the command "awk -f sieve.awk," and to his great amusement it worked: slowly, but perfectly well. When he timed the awk program, it took nearly twenty seconds to perform one pass through the loop. Clearly awk was not the tool for large applications.

In spite of these performance limitations, Hapless took such pleasure in using awk to mimic small C programs that he did not even bother to seek out the gurus and tell them what he had learned.

A week later, he passed one of the gurus on the street.

"Hapless," the guru cried, "how is your awk meditation progressing?"

Hapless said not a word, but produced a printout of sieve.awk, his awk version of the sieve program. The guru looked it over wordlessly, from time to time peering over his glasses at Hapless. He grasped Hapless' elbow and steered him away from the crowd. Greeting him with the secret handshake that only gurus know, he whispered:

"Welcome to level 4." □

The syntax for all the flow of control commands is taken straight from the C language. Newer versions allow users to write and call their own functions, making awk essentially a C interpreter; the user can use it as a tool for writing short C-like programs without having to manipulate a compiler and a linker.

Listing 1:

```
/* Eratosthenes Sieve Prime-Number Program
 * adapted from BYTE January 1983, reprinted
 * July 1987
*/
#define TRUE 1
#define FALSE 0
#define size 1024 /* was 8190 in original
# program */

char flags[size+1];

main( )
{
  int i, prime, k, count, iter;
  printf("100 iterations\n");
  for (iter = 1; iter <= 100; iter++)
  {
  count = 0;
  for (i = 0; i <= size; i++)
    flags[i] = TRUE;

  for (i = 0; i <= size; i++)
    {
    if (flags[i])
      {
      prime = i + i + 3;
      /* printf("\n%d", prime); */

      for (k = i + prime; k <= size;
        k+= prime)
        flags[k] = FALSE;
        count++;

      }
    }
}
printf("%d primes.\n", count);
}
```

Listing 2:

```
# sieve.awk:
# "#" introduces a comment
#
# /* adaptation of Eratosthenes Sieve Prime-
   Number Program from BYTE
# January 1983, reprinted July 1987
# */
BEGIN TRUE = 1
  FALSE = 0
  size = 1024 # was 8190 in original code
printf("100 iterations\n");
for (iter = 1; iter <= 100; iter++)
{
count = 0;
for (i = 0; i <= size; i++)
  flags[i] = TRUE;
for (i = 0; i <= size; i++)
{
  if (flags[i])
    {
    prime = i +i + 3;
    printf("\n%d", prime);
```

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A Tale of Two Word Processors

By Mike Markowitz

It was the best of computers, it was the worst of computers, it was a technical flop, it was a marketing triumph, it had brilliant, dazzling graphics, it had muddy, fuzzy graphics, it had awesome sound, it had noisy sound, it had plenty of software, it had a dearth of software, it was the spring of hope, it was the winter of despair—in short, the Apple IIGS was so like its elder brethren that some authorities insisted on its being received, for good or for evil, in the superlative degree of comparison only.

By Christmas of 1987 there were about 130 programs available that were written specifically for the IIGS. I think we all agree (unless we have the misfortune to be accountants) that the word processor is the Queen of Applications. How good are the available word processors for the IIGS?

At present, the two leading contenders in this area are *Multiscribe GS* from StyleWare, and *Writer's Choice Elite* from Activision. DataPak's *Graphicwriter*, in its newest version, also looks promising, and *WordPerfect* for the GS (version 2.0) is waiting in the wings to capture the high end of the market.

Superficially, *Multiscribe* and *Writer's Choice* look very similar. Both could be considered clones of *MacWrite*, which defined the "look and feel" of a word processor according to Apple's Human Interface Guidelines. Like a Macintosh word processor, a true (16-bit) GS word processor manages the screen as a single hug bit map. Most 8-bit word processors, in contrast, handle the screen as an array of characters. The difference in processing overhead is dramatic. The GS super-high resolution screen measures 320 by 200 pixels, or a total of 64,000 dots. A character-based word processor only needs to display 80 columns by about 25 rows—that's 2,000 screen locations. The situation is really more complex than this, of course, since a GS word processor also needs to worry about 16 colors, and multiple fonts and text sizes.

Both *Multiscribe* and *Writer's Choice* run under the ProDOS 16 operating system, which is still somewhat flaky. I have experienced crashes with both programs, usually when changing files or printing. These problems should be cured in future releases.

For the user, there is a performance trade-off. A GS word processor offers fancy special effects, at the cost of speed and capacity. Existing programs are slow to load, slow in scrolling around a document, slow in changing fonts, slow at everything. Even with a megabyte of RAM, the maximum size of a document is severely restricted.

Writer's Choice wastes some time and disk space by loading a completely unnecessary graphic screen for the user to stare at during boot-up.

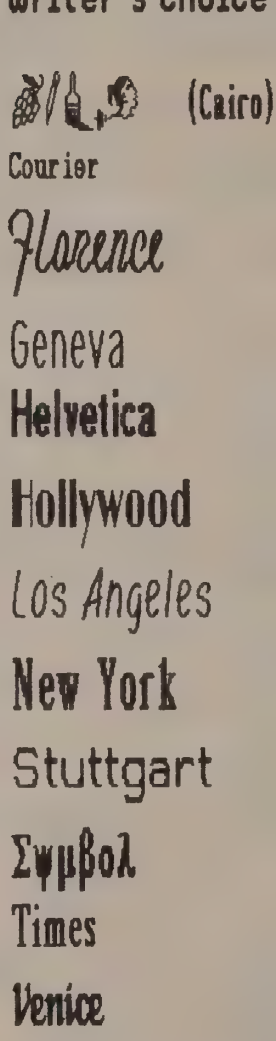
Writer's Choice starts to slow down when a document reaches 10 or 12 double-spaced pages. It provides a series of increasingly urgent warnings as you begin to run out of free RAM. If you use only the rather ugly Shaston font (which is the default) you can create a document of 25 to 30 single-spaced pages on a 512K system. The manual for *Multiscribe* says that the document size is limited only by available memory, but the limits are probably similar.

For most users, the most important consideration in choosing a IIGS word processor will be "How are my documents going to look on paper?" *Multiscribe* is the clear winner here. Although *Writer's Choice* offers a greater selection of fonts, the *Multiscribe* fonts print out much sharper and more legibly, especially in the smaller sizes.

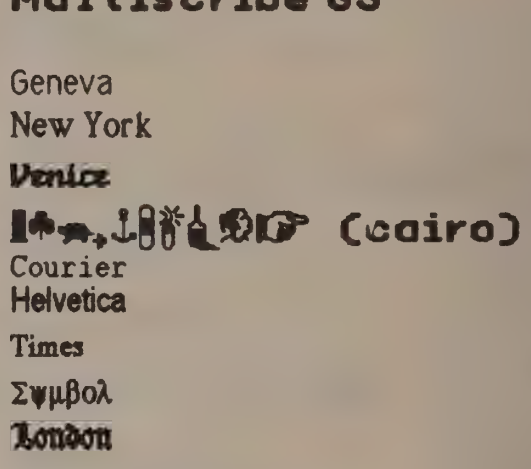
In larger type sizes, the *Writer's Choice* fonts seem rougher and more jagged. These observations apply only to the output from the ImageWriter—I did not have an opportunity to compare LaserWriter output.

Although both programs include the Cairo font, a collection of cute symbols, neither provides a keyboard template or any other kind of reference. I found this annoying.

Text and graphics integration is a major selling point for the IIGS, and here again *Multiscribe* is superior. *Writer's Choice* completely displaces text when it inserts a graphic, and the graphic itself looks severely stretched out and grainy. In *Multiscribe*, text and graphics can share the



Writer's Choice output.



Multiscribe GS output.

Mike Markowitz is a computer engineer for a large Southern California aerospace firm. He has been writing about Apple II hardware and software since 1984. Copyright © 1987 by Mike Markowitz.

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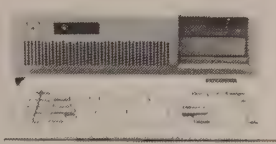

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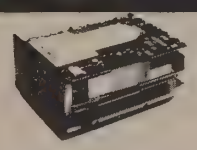

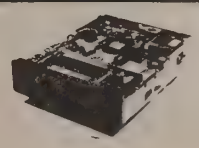

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same lines, and the program seems to compensate for any aspect-ratio distortion.

Another advantage of *Multiscribe* is the "Draw" function, which lets you paint lines, circles and boxes right in your document. This is not a full-featured graphics program—there are no pattern fills, for example—but it is very handy for charts and tables.

Writer's Choice is somewhat cheaper—$79.95 compared to $99.95 list for *Multiscribe GS*. You get what you pay for.

UPDATES

Brøderbund has released two long-awaited conversions for the IIGS: *Print Shop* and *Fantavision*. Both packages make skillful use of the computer's new capabilities, while maintaining downward compatibility with the earlier 8-bit Apple II versions.

Print Shop for the IIGS is surely one of the handsomest programs to appear for this computer. The screens are designed in a pleasing charcoal gray, with buttons that look three dimensional. The designers wisely maintained the original joystick interface, which works very smoothly with the mouse.

Best of all, *Print Shop GS* supports more printers than just the ImageWriter. Until now, IIGS owners without an ImageWriter II have been out of luck for color graphic printing. *Print Shop GS* has color print drivers for the old Apple Scribe, the C. Itoh 8510, the Epson JX-80, EX-800 and LQ-2500, the Juxi 5510 and the Okidata 292 and Okimate 20. A wide variety of common printers are also supported for single color output. This is a big advantage for schools (a major market for *Print Shop*) with a big investment in older printers.

Both Print Shop and Fantavision for the IIGS make skillful use of the computer's new capabilities, while maintaining downward compatibility with the earlier 8-bit Apple II versions.

Early purchasers of *Print Shop GS* (until December 31, 1987) can get a free graphics library disk by sending Brøderbund a coupon, their receipt and $5.00 for handling.

The program can use all previous *Print Shop* graphics, fonts and borders. It includes 12 new fonts (named for California counties), 64 multicolored graphics, 24 borders and a variety of panels. A Graphic Editor can be used to create new pictures, or add color to existing ones. Any greeting card, sign, letterhead or banner can be previewed on screen before printing.

Fantavision is an animation program that can be used to create short self-running "movies." The only big change for the IIGS version is a sophisticated library of sound effects that can be attached to specific frames. Animations created with the earlier 8-bit version of *Fantavision* can be converted to run with the GS version using a utility on the program disk. There is also an Unpack utility, which saves *Fantavision* screens in a format that most paint programs can accept and print out. *Fantavision* is a remarkable creative tool, but one that takes some time and effort to master.

PRODUCT INFORMATION

Multiscribe GS (version 2.0) by Kevin Harvey
Published by: Styleware
5250 Gulfton, Suite 2E
Houston, TX 77081
For Apple IIGS (512K)
List price: $99.95

Writer's Choice Elite by Version Soft
Published by: Activision
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For Apple IIGS (512K)
List Price: $79.95

Print Shop IIGS by Corey Kosak
Published by: Brøderbund
17 Paul Drive
San Rafael, CA 94903-2101
(415) 492-3500
For Apple IIGS (512K) many printers supported
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Fantavision by Scott Anderson
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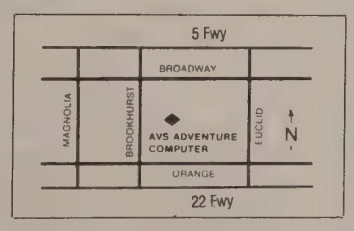

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AMIGA

Report From The Shows

By Matthew Leeds

Last month was a very full one for Amiga owners. Two computer shows provided a showcase for new products, as well as a venue for seminars and after-hours discussions. The Commodore Show in California and the AmiEXPO in New York ran on back-to-back weekends, adding new miles to my frequent flier program.

There was other excitement as well. The California show was at the Disneyland Hotel, two days after the 6.1 earthquake. While I was there a 5.5 aftershock at 4 A.M. caused the occupants of over 200 rooms to check out of the hotel before 6 A.M. Lightweights.

I had the opportunity to see a large number of new products, some I had never heard of before, and others I had only read press releases on. I also spent time talking with several developers, and learned a great deal of new and interesting information.

Programming, Graphics, Video Music, And Games

Perhaps the most interesting new product was **AiRT**, a programming language based on icons, from PDJ Software. It is designed for the creation of small programs which non-programmers can develop quickly to fill specific needs. Instead of writing code using a text editor, you select icons that perform functions. By stringing sets of function icons together in "frames," you can create structured programming constructs. *AiRT* comes with an editor, compiler and reference manual; additional utilities are also included.

Another innovative product that caught my eye was **Mouse Trace**, from Crystal Innovations. This is a pantograph-like device consisting of a framework that holds your mouse, a large pad with a translucent cover that holds original artwork you wish to copy, and a pointer that does not obscure your artwork. You control the framework by holding the portion that contains the mouse, and trace the pointer over the artwork.

The Other Guys were showing two new tools for the Amiga. **Reason** is a set of writers' aids for proofreading text, analyzing style and providing help and editorial comment on English usage. *Reason* checks readability and sentence characteristics, prose style and the use of passive verbs or expletives, general diction, the use of sexist terms, acronyms, spelling errors, double words, punctuation errors, diction and split infinitives. It appears to be a very ambitious product, and I'm looking forward to testing it in the future.

The Other Guys were also showing **Synthia**, a digital synthesizer for the creation of IFF instruments. The specifications looked impressive; this is one of a number of music products that will bring the Amiga a lot of attention in the mid-range professional music business.

Digital Creations caught my attention with **D'Buddy**, a collection of graphics utilities organized around a IFF paint program, designed for use with any resolution mode, including HAM. This is one of a growing number of programs that will take market share away from *Deluxe Paint II* as users find specific features that meet their particular needs. Also shown was **Super Gen**, a professional level genlock and dissolve unit. *Super Gen* offered dual dissolve sliders, programmable dissolves, loop through input and output including key out, adjustable vertical and field start, and output is claimed to meet RS170A spec. Professionals, take note.

LIVE!, the original real-time video framegrabber, is now shipping. It is available from A-Squared Distributions. Several improvements have been incorporated into the software, including an interface with *Deluxe Paint II* that lets you load a captured video into *DP II* in real time. There is also a sequence capture mode that lets you capture consecutive frames, to the limits of available RAM. A complete library of programming documentation and support will also be available for third party developers. The wait is over.

One result of the long wait has been the entry of other companies into the video capture business. Mimetics has been showing its frame buffer with image capture option for several months, and now Designlab has adapted its frame buffer hardware to the Amiga. The **FB-1** was originally developed as a professional product, and it's priced out of the reach of the casual user, but it offers some very professional capabilities. It can store up to 16 frames of video and play them back in any order. However, the current version of the *FB-1* is limited to black & white at 256×242 resolution. The developers claim to be adding color, higher resolution, additional storage, and image processing software.

Another well known Amiga developer also was showing a video capture product. The **Perfect Vision** from SunRize Industries was shown in beta form, and appeared to be inspired by *Digi-View*, but with several enhancements: real-time image capture and the ability to accept any video source. The quality of the image captured seemed low, but the supporting software was not finished. This will be the key issue in deciding if *Perfect Vision* will be an acceptable alternative in choosing a video capture product. SunRize also showed *Studio Magic*, an IFF sound sample editor and MIDI sequencer.

Microillusions showed a variety of new products including **Fire Power**, a very popular game that wins this month's gratuitous violence award for its sound and visual effect of a human being being run over by a tank. In a more humane category was **Music-X**, an entry in the professional music area. It offers full MIDI support, keyboard mapping, real-time recording and sequencing, editing, and the ability to store very large samples. Additional support is provided by the **Micro MIDI** hardware interface and the **Micro SMPTE** reader. In development is the **Patch Editor Construction Kit**, a graphical patch editor that can be customized for virtually any synthesizer.

PAR Software was showing **Express Paint**, an interesting mix of standard paint features and text layout. It provides the ability to format text inside any shape or around any shape. It also supports the half-brite mode, super bit maps, and overscan. It is another example of innovation in the Amiga software market.

New video software products were also in abundance. InnoVision Systems showed a new approach to the 3D animation field. **Video Effects 3D** uses a low-res interlaced overscan display and dual playfield mode (eight color) to animate IFF pictures and brushes. Some of the special effects were amazing, and you can animate up to 99 objects at a time. A beta version of the software was being shown and it looked promising.

Aegis Development showed **Video Titler**, a title generation and presentation graphics package. This is a solid looking title effects package that supports all resolution modes in overscan (except HAM), and uses Amiga system fonts and Aegis's own Polytext Fonts. It also supports the half-brite mode.

A new company in the Amiga market, Syndesis, has two well known Amiga personalities as key players: John Foust and Harriet Toll. Their first product, **Interchange**, is a 3D conversion program. It consists of three modules: the master program and two conversion modules for **Sculpt 3D** and **VideoScape 3D.** It will convert object files from one format to another preserving texture and color information as well. Additional modules will be available in the future to support other 3D formats.

Hardware

A tremendous amount of new hardware for Amigas was also shown. Memory expansion systems, hard disks, expansion chassis, co-processor boards, the whole range—and once again the Amiga owner gets to deal with the non-standard choices offered by a variety of manufacturers. Make your decisions carefully.

Byte by Byte showed a **memory expansion system** for the A500. This is a single board 0–2MByte box with its own power supply. It uses a zero wait state design and can be purchased populated or unpopulated. The power supply turns off when you power down your A500. The case is extremely small, and the board comes with memory verify software.

Spirit Technology showed its A500 memory expander, the **Inboard**, an internal memory expansion board with battery-backed clock calendar. It can be populated with up to 1.5MBytes of memory, and connects through the 68000 socket. It can be used in conjunction with the A501 memory expansion to provide a total of 2.5MBytes of memory in your A500.

Pacific Peripherals demonstrated the **SubSystem**, a two slot expansion chassis for the A500 that accepts the new Zorro form factor expansion cards (A2000 style). It contains its own power supply and has room for one additional 3½" floppy drive. The entire system sits under the A500 and only adds 1.5 inches to the keyboard's height. It looked very clean to me. Also shown in the booth was the **Infinity**, a 10MByte removable floppy disk system that interfaces to any

Matthew Leeds has been involved in the high tech field since he blew up his bedroom playing with a children's chemistry kit. He has been using Commodore computers since 1982 and has a strong interest in photography, video, graphics and related fields. He currently works for Infinity Software.

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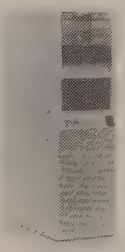

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ASDG previewed the **Satellite Disk Processor,** which may be destined to become the premiere hard disk controller for the Amiga. This is far and away the most ambitious controller I've seen to date for the Amiga. It has an on-card 68000 and 512KBytes of cache RAM, on-card DMA support and MMU, and will support two ST-506 devices and up to 56 SCSI devices. It has room for an optional 68881 chip and supports booting directly from the hard disk. It won't be cheap, but the high end never is.

News

Other news of note. That venerable warhorse of Commodore magazines, **Transactor,** is going to start a bi-monthly magazine covering the Amiga. The plan is to publish alternate coverage of Commodore 8-bit machines and the Amiga. *Transactor* has a solid reputation for in-depth technical articles; if you like that sort of thing, check out the first issue, due out in January of '88.

Finally, Commodore now has a new president and chief operating officer, **Max Toy.** No he's not a TV series. Mr. Toy has previously worked for ITT, Compaq, and IBM. The hope is that he will be able to expand Commodore's distribution and VAR programs, and bring an additional degree of corporate-level acceptance to the Amiga. I wish him good luck and great success.

I'm off to COMDEX in Las Vegas. I'll be bringing back information on new products from New-Tek, a look at Animate 3D from Byte by Byte, and news of new developments in the Amiga arena. I'll put five on the black and see what happens.□

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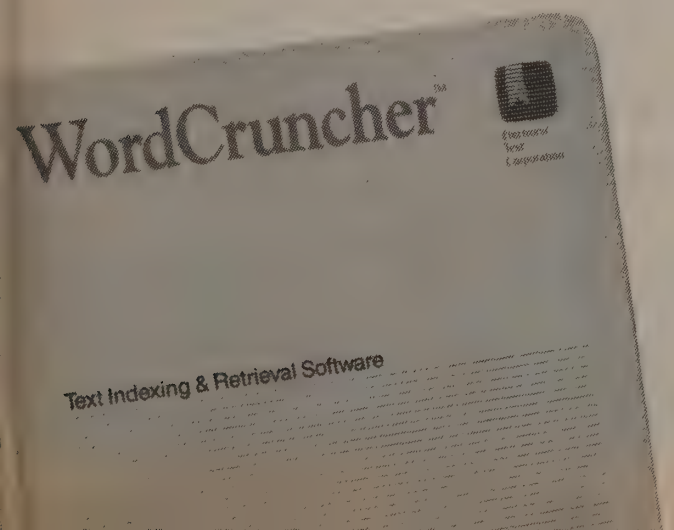

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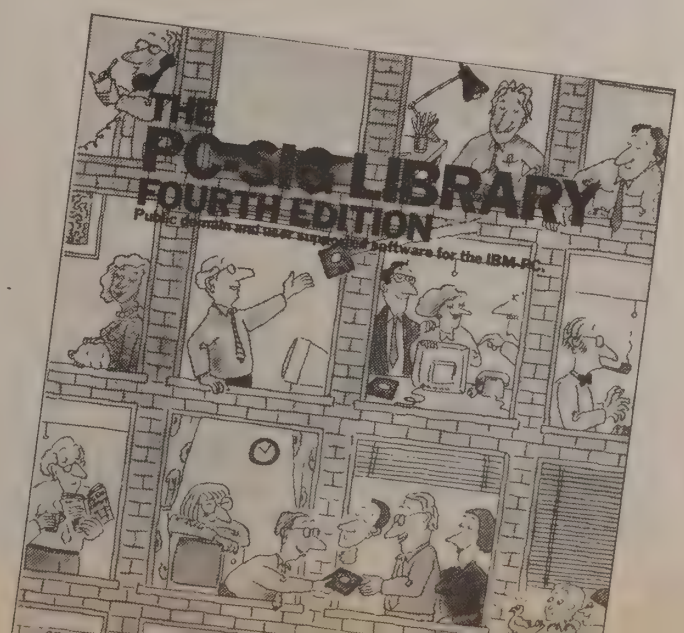

Good News For ST Gamers

By Helmi Kobler

This December issue marks the one year anniversary of the Atari ST column in *MicroTimes*. It's been a wonderful 12 months, and I'm looking forward to the year ahead, especially since 1988 will be an interesting year for the ST. If Atari markets the new Megas well (i.e., if it lowers the machines' high retail prices), then there will be a siginificant burst in ST software and hardware from third party developers. We're already seeing some classy, professional software such as *CAD 3D 2.0*, *Publishing Partner*, *WordPerfect* and others. If the Megas are allowed to do well, there will be much more.

But enough of this Mega talk. The holidays are well on their way, and in the interest of the Christmas spirit, I'm going talk about a few of the hot games released lately. COMDEX, the national computer industry trade show, is only a week away as I write this and I'm betting that I'll return from it with enough new product information to fill next month's column without even a peep about Christmas games and such. So to avoid the reputation of being a Scrooge, it'll be hot new games this month and reports on Atari's CD-ROM player, 32-bit workstation box, and more next month.

MIDI-MAZE

One of the most unique games for the ST comes from Hybrid Arts, a small software firm known widely in the electronic music world for MIDI software such as sequencers and patch librarians. *MIDI-MAZE* ($39.95, 213/826-3777) has nothing much to do with music, but it uses the ST's built-in MIDI ports to become perhaps one of the world's greatest computer party games.

I call *MIDI-MAZE* a party game because it's the kind of game that's best played with a lot of people. The more the merrier! The premise of the game is a little silly, but works nonetheless. You control a sphere-shaped Happy Face that has been placed in a maze with up to 15 other Happy Faces. Picture a man-sized, three dimensional version of those Happy Face buttons popularized in the 1970s and you've got the idea. You maneuver your Happy Face through the maze (using either a joystick or mouse) with a first person perspective, as if you're actually standing in the maze yourself, viewing it from where your Happy Face stands.

The object of the game is simple: to roam through the maze and, by way of two or three fired shots, kill any other Happy Faces you encounter. Whichever Happy Face is first to score 10 kills wins the game.

MIDI-MAZE's claim to fame lies in its ability to chain multiple STs together via their built-in MIDI ports, creating a network where players, each playing at their respective ST system, can actually fight one another in real time in the same maze.

Intense play is inevitable if you have several players (16 are allowed on one network). Players become super-cautious, even paranoid, nervously checking behind themselves for any unfriendly Happy Faces that might try shooting them in the back. Players develop strategies and styles, such as hiding behind corners of the maze until other Happy Faces pass by, following them into a long, narrow corridor where escape is unlikely and then letting them have it! In the early stages of the game, it's an anarchic every-man-for-himself contest to score the most kills. In mid-game, a few dominant players emerge and force the others to form teams and alliances — "You don't shoot me and I don't shoot you — but we both shoot the Red guy!" sort of thing. As the players near their 10-kill goal, though, alliances usually fall apart and the backstabbing and betrayals begin. *MIDI-MAZE* is a great experiment in human psychology.

Of course, not many people own multiple ST systems to create a *MIDI-MAZE* network. The game can also be played solitaire, where mazes are filled with up to 15 other hostile, computer controlled Happy Faces which vary in intelligence from Plain Dumb to Not-So-Dumb. If you become bored with the library of pre-designed mazes included with *MIDI-MAZE*, you can create your own with an ASCII text editor.

Although certainly not as fun as the multi-player *MIDI-MAZE*, stalking (and being stalked by) the computer is still exciting. But if you get some friends to bring their systems over during the holidays, give a multi-player *MIDI-MAZE tournament a try.*

Gauntlet

Another game arriving in time for the holidays is Mindscape's *Gauntlet* ($49.95, 800/221-9884), an ST translation of Atari Games's 1985 arcade hit of the same name. Be either Thyra the Valkerie, Merlin, the Wizard, Questor the Elf or the mighty warrior, Thor, and explore vast dungeons for magic potions, treasure, food and adventure. Of course, (and this is an original idea) the journey will be perilous, as hordes of ghosts, evil wizards, fire-spitting demons, trolls and other undesirables challenge your every step.

It's not hard to guess that *Gauntlet* is a strain of the traditional arcade shoot 'em-up. It has no profound puzzles to solve, but it has flashy graphics (though its scrolling sometimes lacks smoothness) and its relentless hack 'em character can be entertaining, if that's what you like. Also, if you're a fan of the arcade *Gauntlet*, you will appreciate that the ST version has remained more or less faithful to the original, with only minor exceptions. For instance, only two people, as opposed to the original's four, can play simultaneously due to the ST's two joystick ports.

Young kids, especially males, will like *Gauntlet* and probably play it religiously for days into the New Year. I personally found it easily mastered and redundant after a short time, though.

If you're looking for more arcade translations, Mindscape has also ported over an ST version of Xevious, another popular Atari shoot-'em-up.

The Bard's Tale

If the simplicity of *Gauntlet* doesn't appeal to you, take a look at *The Bard's Tale* ($49.95, 415-571-7171), one of Electronic Arts's newest games for the ST. Since *Bard's Tale* had been out since 1985 for 8-bit machines such as the Apple II, I was afraid the ST version might have been a direct port, retaining the look and feel of the versions running on inferior machines. *The Bard's Tale* was a pleasant surprise. Although it uses the ST's low resolution, colors are used effectively. The game's scrolling is quick and you can use the ST's mouse as an alternative to the keyboard. My only regret is that *The Bard's Tale* is copy protected, barring its installation on hard drives. This is a pain, since swapping disks is tedious and waiting for floppies to load and save information tends to interrupt the pace of the game.

The story of *Bard's Tale* is perfect for the adventurous soul. The once "harmonious" town of Skara Brae has been overwhelmed by the dark forces of some deranged Wizard. And it's up to you and a ragtag party of various characters to resist. You've got warriors, wizards, bards, paladins, and monks to help you succeed. And just about everyone (and -thing!) else to see that you don't.

The game sports over 80 different spells to use, and 16 mazes to explore, not to mention the various shops, temples and castles of Skara Brae. Game play resembles role playing games such as Dungeons and Dragons, where characters are created by choosing race, class, and attributes such as strength, intelligence, luck, etc. and advance to in level by acquiring experience points.

The only thing going against Bard's Tale is that it's a very involved game, requiring you to invest a lot more time in it than you would a game like *Gauntlet*. But if you've got any free time during the holidays, give *The Bard's Tale* a try.

F-15 Strike Eagle

Finally, Microprose has released an ST version of its *F-15 Strike Eagle* jet simulator ($34.95, 301-771-1151). *F-15* was a popular game for Atari 8-bit computers years ago, though in retrospect it suffered from kludgy speed and blunt, wire frame graphics. The ST port has sped things up a bit, while adding 16 colors to cockpit displays and solid-form graphics to ground targets and enemy planes.

The object of the game in *F-15 Strike Eagle* is tactical jet fighter combat. You're given a choice of several missions to take on, ranging from the bombing of Libya or Hanoi to dogfighting in the Persian Gulf. Since *F-15* is supposed to be a simulation of the real thing, Microprose has put a lot of attention to detail into the game. Your jet comes with a limited arsenal of ammunition, bombs, and short, medium and long range missiles. You can employ electronic jamming or launch flares when taking evasive action from enemy air or ground missiles. The game's manual also discusses various offensive and defensive flight maneuvers, and includes detailed descriptions of the different enemy fighters encountered in during missions.

For the armchair Tom Cruise or young, aspiring Top Gun jet ace, *F-15 Strike Eagle* is a must. □

Helmi Kobler took his first step into the computer world in 1983 when he walked out of Macy's with an Atari 800 in his arms. Still an Atari user, he's now inseparably attached to his ST. He can be reached through MicroTimes or e-mail <helmi> on The WELL at (415) 332-6106.

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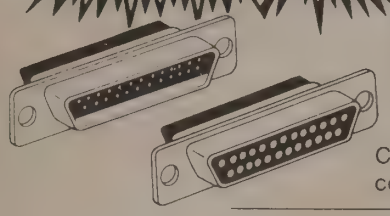

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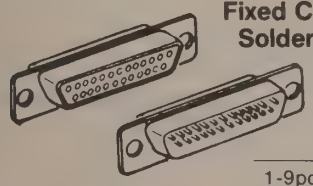

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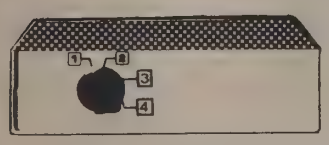

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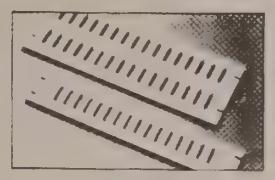

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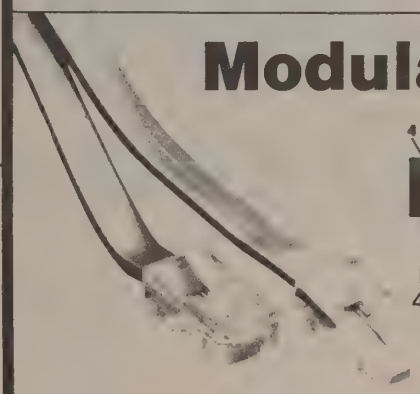

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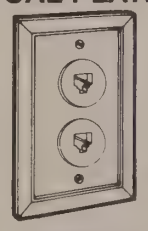

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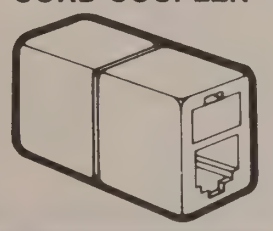

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Computers And Communities

Electronic Democracy In The Old West

By Mary Eisenhart

Dave Hughes didn't come to the Hackers Conference this year. He was in the wilds of Montana, setting up a system to connect all the state's one-room schools via packet radio. He's also planning to set up an electronic village in an undisclosed ghost town in Colorado's mountains, where he imagines the residents will elect sysops rather than city officials. And in recent months, he's fired more than a few salvos at the FCC in the matter of proposed access charges for packet-switched networks.

Like generations of his family before him, Hughes lives in Colorado Springs, CO, a town where the spirit of the Old West thrives and every Air Force Academy cadet is issued a PC upon enrollment. Futurist, populist, poet, pioneer (as Sourcevoid Dave) of electronic publishing, West Point graduate and retired Army colonel, Hughes labors energetically at dragging his hometown and the world at large, often kicking and screaming, into the Information Age. A familiar figure about town with his ubiquitous cowboy hat and Toshiba laptop, Hughes has acquired something of a local reputation as a gadfly: "My grandfather carried Colt 44s," he says, "and I carry a hip-shooting microcomputer. And I shoot it just as effectively as he did."

Hughes, along with his partner Louis Jaffe, runs Chariot Communications. Among Chariot's features is a free public bulletin board with a special section called Roger's Bar (after the historic local smoke-filled room) devoted to discussing local, national and global political issues. In Roger's Bar, a spectrum of locals from teenagers to truck drivers to professors to Air Force generals debate the issues in a forum

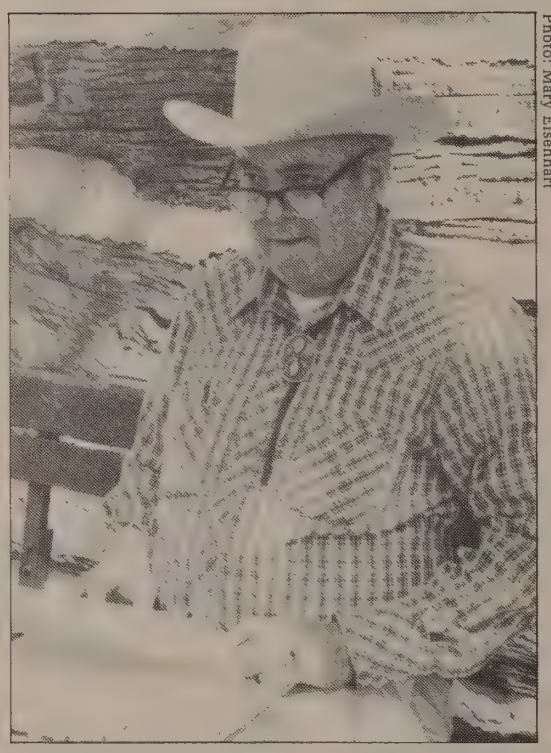

Photo: Mary Eisenhart

Says Colorado's Dave Hughes: "My grandfather carried Colt 44s, and I carry a hip-shooting microcomputer. And I shoot it just as effectively as he did."

where speakers prevail by the merits of their arguments and the quality of their ideas. Somewhat to the consternation of local politicians, in its five years of operation, Chariot—and, by extension, electronic communication in general—has proved, in Hughes words, "a tool that's got to be reckoned with, a legitimate public policy tool for the general public."

Hughes' first foray into electronic politicking came about three years ago. Like many cities, Colorado Springs faces a perennial conflict between economic health and quality of life; in a period of hard times, the planning commission found itself dealing with a sudden proliferation of backyard auto repair businesses and other unsightly attempts by local residents to make ends meet. In an effort to solve this problem, the commission proposed an ordinance change that would put stringent restrictions on at-home businesses. Hughes saw a legal notice for public hearings, was the only citizen who showed up at the commission meeting to discuss the bill, and found the legislation full of flaws—including what he considered terminal unclearness on the concept in the matter of technology and the city's future.

"I argued high tech," he recalls. "I cited the fact that Toffler, in *Third Wave*, interviewed Hewlett-Packard in Colorado Springs, and asked the manager then, what percentage of his workforce—and this is 2,000 people—could work at home, and he said 35%. *In 1979. In Colorado Springs.*

"The restrictionism of zoning—you're in a residence, or you're at work, or in the marketplace, recreation—also stems from the industrial age theory of the division of work—people lived at home, they shopped in malls, and they worked in companies or factories, and zoning reflected it. So that mindset, which is still what planners are taught, simply reflected that, and not the post-industrial society, where where work is, and where play is, is starting to blur.

"So I said, you've made an ordinance that I couldn't remodel my bedroom as a telecommunications center, under the spurious theory that that's going to interfere with my neighbors. But homes are going to be places of work in the future, if they aren't already; you are actually repressing the economy of Colorado Springs in the effort to somehow improve it. Quality of life starts with a buck, making an income, and people cannot afford to enjoy the quality of life in Colorado Springs. That has been its chronic problem.

"That kind of stunned the planning commission," he laughs. "They hate to see me coming anyway."

The commission voted to table the matter for 30 days. Hughes went home and uploaded the text of the proposed ordinance to Chariot. He then wrote a letter to the editor of a local paper, explaining what he considered the evils of the bill and inviting local residents with modems to call in and discuss it.

"The city council never knew what hit them," says Hughes of the subsequent groundswell of public opinion. "Two hundred fifty people at least, who didn't know me, the ordinance or the bulletin board, dialed in.

"What I had not anticipated was that among them were professionals in larger companies,

---

In the continuing onslaught of more powerful machines and spiffier software, providing us with ever-better tools and toys, it's easy to lose sight of another profoundly influential aspect of the personal computer revolution—its impact on the larger community of which computer users usually comprise only a small fraction.

Links is a column dedicated to exploring the role of the personal computer in the community, whether local or global—bulletin boards operated by local governments, computers in the operations of service organizations, the use of computers in grass-roots political and social campaigns, and a host of ingenious applications we haven't heard about yet.

We welcome your feedback and suggestions for future subjects of this column. Please send them to Links, MicroTimes, 5951 Canning Street, Oakland, CA 94609, or send email to microx on The WELL at (415)332-6106.

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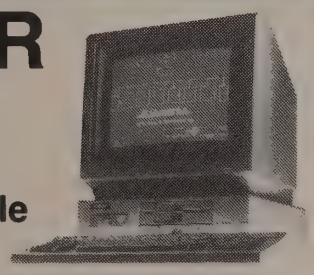

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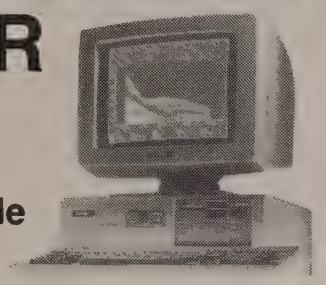

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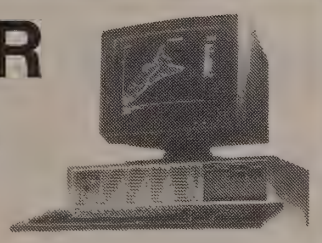

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who read the paper in the morning, went to work, sat down at their company machines, dialed in, hit the printer button, printed out the ordinance and the comments on it, put it on the Xerox and passed it around the plant.

"Thousands of copies of the ordinance got circulated in town. One poor planning commission member went to the Osborne Users Group on a Saturday morning, was confronted with stacks of printouts of the damn thing, and spent the whole time defending himself against fellow Osborne User Group people.

"And then when we walked in the door for the next meeting 30 days later, it was populist. From Libertarians to longhairs in there, not all in computers by a long shot, music teachers and everything else. Because it was populist, there was no organization out there, it was inherently decentralized."

The ordinance went through several revisions, each of which was posted and debated on Chariot, and finally reached what was considered a workable version. Whereupon it passed with no further public comment. The mayor made some carping remarks about the fickleness of public interest; Hughes retorted: "The process worked, it did not fail. The real hearing was in the RAM of a neighborhood computer. Where the hell were you?"

"Next day," he grins, "City Hall was online—and that started the process where the city realizes that it can do the same thing."

Since then, Chariot and Roger's Bar—and other local boards—have become a force to be reckoned with, utilized by proponents of various causes.

Hughes derives particular glee from Chariot's role in the election victory of an utterly unknown candidate for city council this spring. It seems that the favorite candidate for the vacant seat was a local professor, a friend of developers and advocate of urban growth. As it happens, this professor had roused the ire of Hughes some years earlier with the remark, "What could anybody possibly have to say on a computer network or bulletin board that's significant?"

On Chariot, teenagers, truck drivers, professors and Air Force generals debate the issues in a forum where speakers prevail by the merits of their arguments and the quality of their ideas.

Recalls Hughes: "I said, as a professor of political science, if you don't know that in the year 1985, if you don't grasp that at all, I don't know why you are fit to educate my children. You're not preparing them for the public policy implications and the political implications of these new forms of communications. After all, it's a cliche what television's done to politics.

"So I just decided that if he ever gets into an influential position, I'm going to oppose him."

Three weeks before the election, Hughes went to a Candidates' Night, and was favorably impressed with local merchant Wayne Fisher. He invited Fisher to upload his platform to Chariot and watch the response. Fisher was able to discuss his views with the board's callers; further, the online feedback helped him tailor his presentations to his offline audiences.

When the votes were counted, Fisher (who'd spent a princely $1,400 on his entire campaign, and that with great reluctance) had triumphed over his famous and free-spending rival by a narrow margin of 180 votes. This political miracle of the electronic age attracted the attention not only of local papers but publications as far-flung as the *Wall Street Journal*.

All of which makes Hughes quite happy, since Fisher is currently engaged in battle with local bureaucracy to make online communications an integral part of local government: "He was so impressed with the results that he then got agreement from the city attorney that he could go online and discuss with the public even quasi-judicial matters. The only issue that has not been resolved yet is, if two councilpersons come online, does that constitute a meeting under the legal interpretation of council meetings; therefore, does it require notification?" But he thinks the day is not far off when Colorado Springs citizens can access their city government via modem, and "when they've done that, I'm content."

"This is a serious tool of public debate, and public policy, and partisan politics," he says. "All I would hope is that more people do it. Go find somebody that's got a bulletin board and get your ideas in there." (Chariot can be accessed at 303/632-3391, 300/1200 baud, 24 hours. Voice number is 303/632-4848.)

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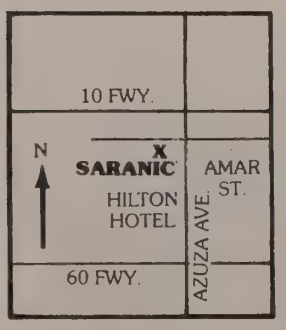

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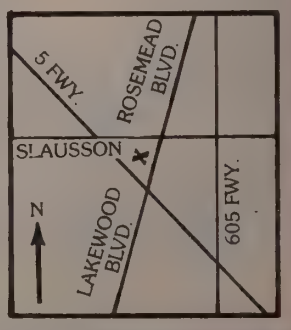

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Bridge For The CP/M User

By Robert D. Athey Jr.

Of all the games I've ever played, bridge is the only one that has kept its attraction over 30+ years. I delighted in the computer bridge games, when they became available, but the first I saw were MS-DOS. Recent catalogues (Dynacomp and Central Computer) showed CP/M versions, and I bought them. They help keep the mind sharp for the game I do get to play now and then, though they are no subsititute for the real thing.

Bridge Player Alice

The first of the games I gathered up was *Bridge Player Alice*. I was was surprised to find it a good attempt at that ever-popular buzzword, Artificial Intelligence. The program teaches itself to play whatever system of bids you use. *Bridge Player Alice* comes on one disk, plus documentation, in several program modules, including an installation module requiring the key controls for screen display for your specific terminal. This, as far as I'm concerned, is an unnecessary inconvenience — this information (if it exists at all where users can access it) is hidden in appendices of the user manual. The install program needs the "clear screen" command (in decimal) and checks the result by clearing the screen with a query "Did the screen clear?" That result checking is a nice touch for the non-techie trying this sort of thing out for the first time. I advise telling this program to store playing files on a disk in the B:drive, as you'll see a bit later. By the way, an MS-DOS version exists.

Alice's teaching mode allows you to look at each hand, in the sequence of bid; the computer will type in a bid for you to examine and change to fit your own strategy.

After installation, you can initiate the actual program two ways, by typing in "Play" or "Alice" to call up either *.COM file. The "play" command brings up a contract of six spades for you to play with the heart lead by opponents already in place. You can at best play for down one, and wonder how your partner ever got you into that. Upon completion of play of that hand, the initiating screen for "ALICE.COM" comes into view (we show it as Figure 1, below). As you can see, *Alice* is a Novice and wants to play your system.

You can play "Standard American," the tournament aficionado's designation for Goren's simple system, or you can build your own system. If you call yourself by the name of SA, you will play "Standard American," but your name will build new files. If you look at the directory of the disk (that you made by copying the Master disk), you'll see a lot of SA files (SA.1C, SA.2C, SA.1N,...)and not much room left for the new

FIGURE 1
SCREEN SHOT OF "ALICE.COM" OPENING

```
BRIDGE PARTNER
© Copyright 1985 by
Stevens Software
3118 NE 111th Circle
Vancouver, WA 98686
Distributed by DYNACOMP, Inc.
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Hello, my name is Alice. I have had one lesson on opening bids from my programmer.
You may teach me to bid by running through some hands or practice your bidding from
a previously established session. The more experience I get, the better my bidding becomes
so let's get started!

What is your first name? BOB

Do you want to (T)each or (P)ractice? P

Enter a hand number to begin? 75
```

FIGURE 2
SCREEN SHOT OF "MENU.COM"

```
BRIDGEMASTER
© 1982 BY DYNACOMP, INC.
THE ACTIVE PLAYER SCORE FILE IS BOB
PROGRAM OPTIONS:
 1 - CREATE A NEW PLAYER FILE
 2 - SET AN EXISTING PLAYER FILE TO ZERO
 3 - CHANGE OPPONENT
 4 - PLAY BRIDGE
 5 - PRESET HANDS
 6 - SCREEN INSTRUCTIONS (WIDE FORMAT)
 7 - SET TERMINAL PARAMETER (RESET FILES)
 8 - LPRINT INSTRUCTIONS (TO PRINTER)
 9 - DISPLAY LAST HAND PLAYED
10 - QUIT. YOU MUST USE THIS OPTION TO TERMINATE THE PROGRAM
     OR THE DATA FILES MAY BE DAMAGED.
ENTER SELECTION ||||› ?
```

FIGURE 3
SCREEN SHOT OF ACTIVITY AFTER "PLAY BRIDGE" CHOSEN

```
ENTER A VALUE BETWEEN 0 AND 999 ? 999

PLAYING HAND #999

YOU (SOUTH) ARE THE DEALER
BOTH TEAMS VULNERABLE

SHUFFLING

DEALING
```

Bob Athey has over 20 years of experience working on computers and runs his own company on chemical consulting and contact research. He can be reached through MicroTimes or at (415) 526-3541. *Copyright © 1987 by Robert D. Athey Jr. All rights reserved.*

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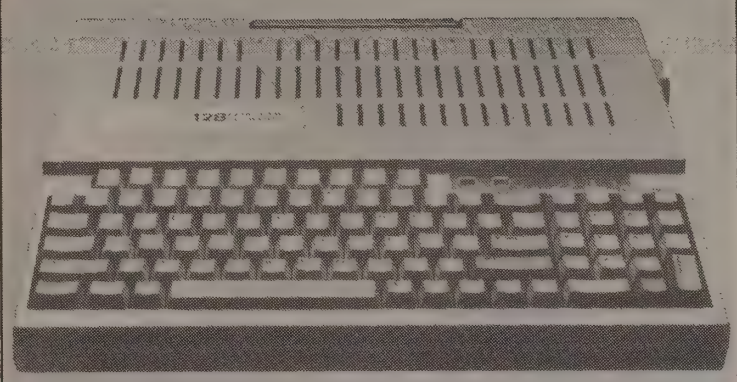

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files (in SSDD machines) or to expand the SA files. These SA files are the reference files that *Alice* uses to sort through a hand and decide what to bid. Similarly, my B:disk has a set of BOB files showing her what I expect her to have when she makes a particular bid. *Alice* builds these files from the "T" teaching choice you make at the opening screen.

After you've played a few hundred hands with *Alice* in the teaching mode, she has a pretty good idea that a "One Heart" bid has 5 to 8 hearts, 0 to 3 spades, 0 to 4 clubs, 0 to 4 diamonds and 12 to 19 high card points (Goren type). I play five card major suits, but you can play four card majors, as *Alice* will learn from what you tell her. It takes about 300 hands to get *Alice* to learn to handle routine bids routinely. The Blackwood convention (an artificial bid named for the man who devised a way to ask for how many aces are in partner's hand) is already programmed in, and *Alice* can bid to slams.

The teaching mode allows you to look at each hand, in the sequence of bid; the computer will type in a bid for you to examine and change to fit your own strategy. This change modifies the bid comparison files and teaches *Alice* your own system. All the hands are bid this way, until there are three passes. You then have the option to play, bid the next hand in the number sequence, or quit.

Play is according to standard rules, with one exception. The declarer's hand and the dummy are both exposed on screen for your play in either position. The lead comes from the left of the declarer, and there is no type ahead buffer, so you can enter the card only after the command

FIGURE 4
SCREEN SHOT OF BIDDING SEQUENCE

```
  S: A Q 4 3 2
  H: J 5
  D: T 7 3
  C: Q 9 3
HAND #999
SOUTH WEST NORTH EAST
? P  1H  PASS  PASS
? 1S  PASS  2S  PASS
? P  3H  PASS  PASS
? P
```

FIGURE 5
SCREEN SHOT OF HAND LAYOUT AFTER PLAY

```
HAND 999  S: KJ8
  H: AT73
  D: QJ5
  C: 865
S: T6  N  S: 975
H: KQ984  W  E  H: 62
D: A942  S  D: K86
C: AK  C: JT742
  S: AQ432
  H: J5
  D: T73
  C: Q93
POINT COUNT:
  W  N E S
  18  9  5  9
PRESS RETURN WHEN READY?
```

As Bridgemaster is a modular collection of many programs, it takes a while for each stage to be completed, during which the screen gives you Shuffling and Dealing messages.

to enter the card. It retains the exposed trick when all cards have been played until you hit a carriage return to start the next trick. This must be done for all thirteen tricks — a bit slow when there's no thinking to be done since you have all the high cards.

There is one quirk of play, in that the highest card in a suit will be played most of the time by the defending or declaring computer when you've started with a low card. The computer defender will occasionally not cover a finesse play, but count on the computer to win with an Ace from Ace, Queen in last position. Computer declarer will make serious errors every once in a while, too, but also will occasionally take a finesse. However, the play does offer challenge of the thinking processes of offense and defense. An occasional error by partner in defense does limit the number of set contracts.

The program set also offers a way to modify the SA.* files or your own. The SETBID.COM program allows you to examine the bid files that have been built, so changes may be made. The documentation gives detail on finding and changing the record. I've not messed with the SETBID program, as I am already pleased with how well *Alice* has adapted to weak twos, and five card majors after several hundred hands.

Bridgemaster

The second bridge program is an offering from Dynacomp called *Bridgemaster* (a bit of an overstatement). It's a little older than the *Alice* program, and requires MBASIC to be run. Again, it comes on one disk and has a 5" x 8" paperback booklet of eight pages as the documentation. Versions are available for the Commodore PET, TRS-80, Northstar, Osborne, Apple II, Atari, and others.

Starting up in this program is simple, as it is the standard MBASIC game format. You simply type in "MBASIC MENU" and you see the menu of options we show as Figure 2 roll onto the screen. Choosing the 4 option on the menu brings up the screen we show as Figure 3. Type in a number to select a hand, and the computer will generate a file and store it under that number. There are more than the 999 hands, as you can generate a hand at 998.999, as well. There is also an option to let you enter your own hands from the game last night.

As this program is a modular collection of many programs, it takes a while for each stage to occur (even on the ON! RAMdisk!), during which time the screen shown on Figure 3 appears with Shuffling and Dealing messages. The hand then gets shown (you are always South and dealer) and the Bidding can commence, as you see on Figure 4.

Play starts as soon as the bidding is finished. The card to be entered is cued by a question mark showing where you are supposed to play it (North, if it is his turn, or South if it is yours). Again, as with *Alice*, when you are on defense, you see only your hand and the dummy, and when on offense, you see your hand and North's.

Play is slow, and flawed by the tendency to play too high a card. I've not seen this computer declarer finesse for a missing high card yet, and I've played more than a hundred hands. After playing, the options are to return to the menu or to display the hand just played (the same as option 9 on the menu). We show that display as Figure 5. We might have made two spades, but good defense beats three hearts every time as the clubs are never established until too late.

You can review how you've done against the computer, as the computer updates the games won or lost and shows the results to you after each hand. I'm averaging making about 70% of my contracts, while the computer is making only about 60%. The net difference in scores is considerable, as I play about 60% of the hands.

The main gripe I have with this program is that it is so slow. Perhaps I've been spoiled by the MS-DOS bridge programs and *Alice*, but the speed is a consequence of the need to compile and run each BASIC program module separately. Perhaps the user familiar with BASIC can convert it to a *.COM file with BASCOM, the Microsoft compiler/converter for BASIC programs.

I prefer to play the MBASIC program on the ON!, because of the RAMdisk speed up. The ON! has recently been upgraded, thanks to Woody McPheeters and Dwight Chew, who helped with my new Keycap and ROM installation replacements, which came from ONEAC about two months ago.

Etc.

Incidentally, I've written this on the new *WordStar 4*, and used "Xscreen" from Xpert Software to capture the figures for the demonstrations. The new *WordStar* has an option to print a file to disk, in ASCII form, which has no page breaks or any of the printer commands acted upon. That's really nice for putting together a compact file for modem transfer. Putting together the file with margins at columns one and 75 makes the display a bit fuller, and an editor can see a lot more of the text on the screen. □

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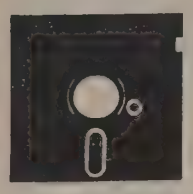

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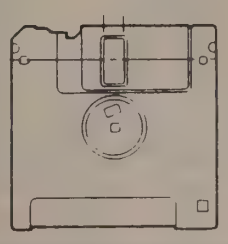

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A Period Of Transition

By Mary Eisenhart

Some of you who sent us listings recently may have noticed that said listings are conspicuous by their absence. As we said last issue, this absence will be with us until we get to our April issue, which will feature new, spiffy, up-to-date listings and be distributed at the West Coast Computer Faire. So if you've already sent us a listing within the last month, and nothing changes between now and February 1 (the deadline for new listings), you're covered. And if you haven't sent us a new listing, please do so now, because after the March issue all the existing listings will go away. And remember, if you don't want your listing subjected to the dubious mercies of axe-wielding editors, please keep it to 15 words or less.

Meanwhile, another urgent cry for help from a luckless seeker after knowledge. **Dick Gifford** of Antioch seems to recall that some years back there was a user group in San Francisco called **:BADOC** for users of the Script text-formatting language. Dick explains that Script is IBM's answer to the nroff text-formatting language in UNIX (perhaps if he's asked nicely, the intrepid **Bennett Falk** will send **Hapless User** out to consult the gurus about nroff and troff sometime). It apparently has a variant called DCF/Script (Document Composition Facility), a version of which was copied by the University of Waterloo in Canada and christened Waterloo Script. Says Dick of the vanished :BADOC, "Many Bay Area companies belonged to it, including Bank of America, Charles Schwab, and Lucky Stores. It was considered to be a corporate support group."

If any of you readers have any inspirations on this score, please give Dick a call (at a civilized hour, of course) at (415) 757-4011.

On the Orphan Computer front, mountain-dwellers who own **Dynabyte** computers (or want to sell their Dynabyte computers and move on to clone-land or something) are invited to check out the **Tahoe City Dynabyte Users Group. Walt Kass,** who sends us this notice, says that the group offers a great opportunity to swap, buy or sell boards, parts, or entire units. You can write to Walt at P.O. Drawer 2629, Olympic Valley, CA 95730, or you can also give him a call at (800) 451-3686 or (916) 583-5050.

Northern California Mac users take note: **Mac Festival '88,** a regional computer show sponsored by the **Mac Business Association,** will take place on December 13 at the Dunfey Hotel in San Mateo. Vendors will present their products, seminars will present current and future trends in Mac technology, and assorted fun stuff will also be happening, including a **Beyond Dark Castle** contest (obviously inspired by somebody who's seen the Dunfey...). For further information, call (415) 644-0516.

It's been a great month for **HyperCard** enthusiasts. On October 22, the **Berkeley Macintosh User Group** held its annual Mactoberfest, with all manner of spiffy new Macintosh products, including many for the Mac II. Featured speaker was **Bill Atkinson,** who, along with some of his programming colleagues, demonstrated some of *HyperCard*'s wondrous capabilities. Atkinson also deplored some of the hype surrounding his brainchild, saying that it was less a miraculous hypermedia implementation than an "erector set" for the construction of individual working environments.

A videotape of Atkinson's presentation was one of the guests of honor at a *HyperCard* event at **Mills College** in Oakland on November 7. *HyperCard* enthusiasts (with denizens of **The WELL** making a fine showing) gathered from far and near (well, at least as far as Santa Rosa) to show off their stackware creations and discuss the joys and aggravations of working in this new idiom.

Finally, this will probably be a little late for NoCal folks, but SoCal *HyperCard* buffs who'd like to combine a little trip to the Bay Area with biz might be interested: the **Software Entrepreneurs' Forum,** who you may remember from an article in the very recent past, is holding a **HyperCard Developers' Seminar** on November 21. If you'd like to register, or just want more information, you are cordially invited to call (415) 854-7219.

Also on the Mac front, **Ruth Stever** of **MacValley** invites all and sundry to check out the group's December 15 meeting, where hardware and software vendors will gather for MacValley's annual **Holiday Vendor Faire.** If you'd like to be in on this, give Ruth a call at (818) 848-1277.

If you're planning an extended stay in Europe with your computer, you might want to write to **ACUTE, American Computer Users Temporarily in Europe.** They'll help you deal with culture shock and the considerable variety of electrical situations you're likely to encounter, as well as more specialized problems. You can reach them at Postfach 4, D-8818 Lehrberg, West Germany.

Loyd Cribbs, a faithful correspondent from the **San Francisco PC Users Group,** has kindly sent us advance notice of the group's upcoming activities. The December 21 meeting will feature a presentation from **Carrie O'Loughlin** of **Brøderbund Software,** who will discuss *ForComment* and PC programs currently being developed. At the January 18 meeting, **Jim Button** of Buttonware, a leading shareware house, will speak on the distribution and marketing of shareware. And if you'd like to know about the group's other plans and activities, call its 24-hour hotline at (415) 221-9166 for a recorded message, or alternatively call the SFPCUG BBS at (415) 621-2609.

There's even more good news for users of **Ventura Publisher,** especially if they happen to live anywhere near the company's headquarters in Morgan Hill. **VPUG, the Ventura Publisher User's Group,** meets on the third Wednesday of the month in the Xerox Building at 475 Oakmead Parkway, and the next meeting's on December 16 at 6 pm. This is the only user group officially recognized by Xerox and Ventura Software; in return for your $24 a year, you get a monthly newsletter, all the valuable contacts of monthly meetings, and access to the VPUG-SIG, now under construction on CompuServe. If you're in the area and want to check out the club, its address is 16160 Caputo Drive, Morgan Hill, CA 95037. And if you're not in the area but would like information on other local VPUG chapters, call (408) 778-1125.

Finally, **Tom Sutro** of the **Orange Coast IBM PC User Group** reports that the club now has 700 members, 350-400 of whom attend the monthly meetings. These meetings are held on last Saturdays at 9 am in the Science Hall of Orange Coast College in Costa Mesa, with a lavish array of speakers, help, and public domain software. Call Tom at (714) 898-7998 if you'd like to know more.

That'll do it for this month. Remember, keep those new listings coming in and don't panic when you don't see them for a couple of months. All good things in all good time, as a wise man once said. Send Snail Mail to 5951 Canning Street, Oakland, CA 94609, and email to **microx** on The WELL, (415) 332-6106. As ever, thanks. □

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The Computer Consultant's Network, (213) 479-4074. Running a modified version of Martian! Software. 24 hours a day. This is not a job board, but merely a place for computer professionals to network and share information.

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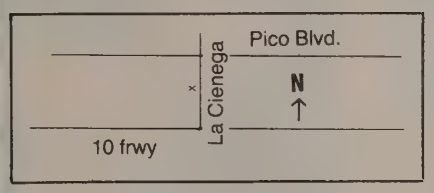

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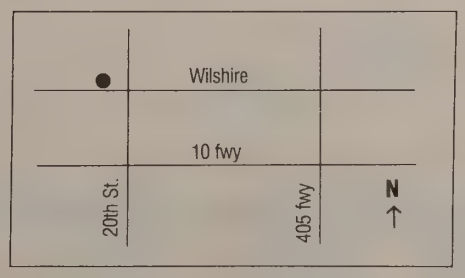

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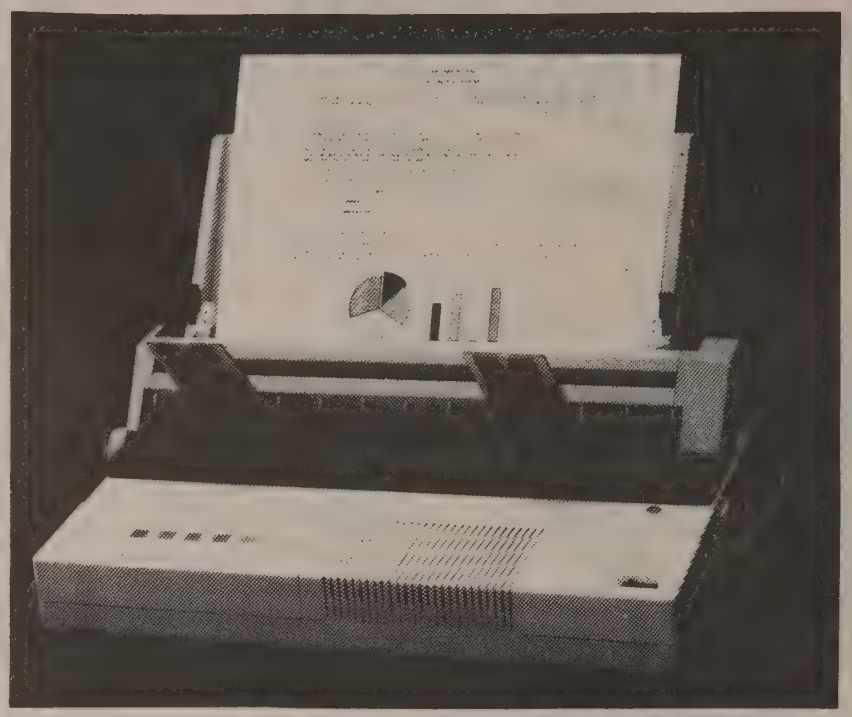

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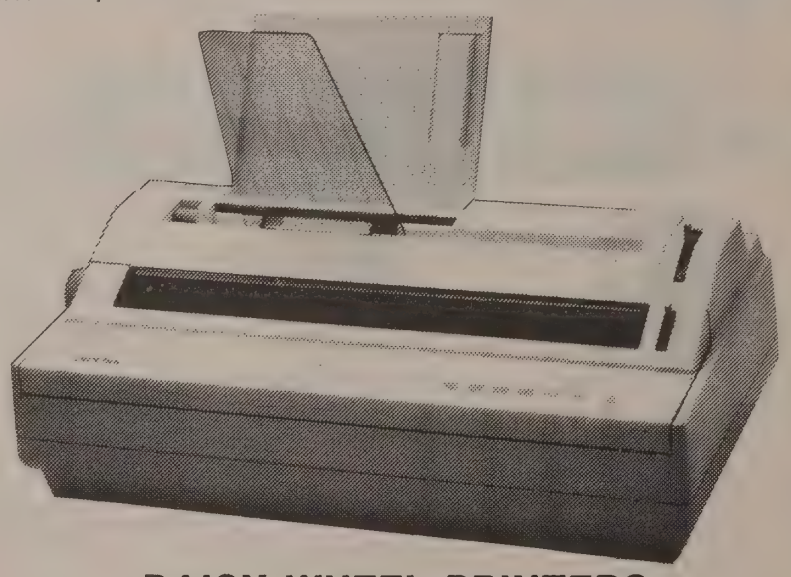

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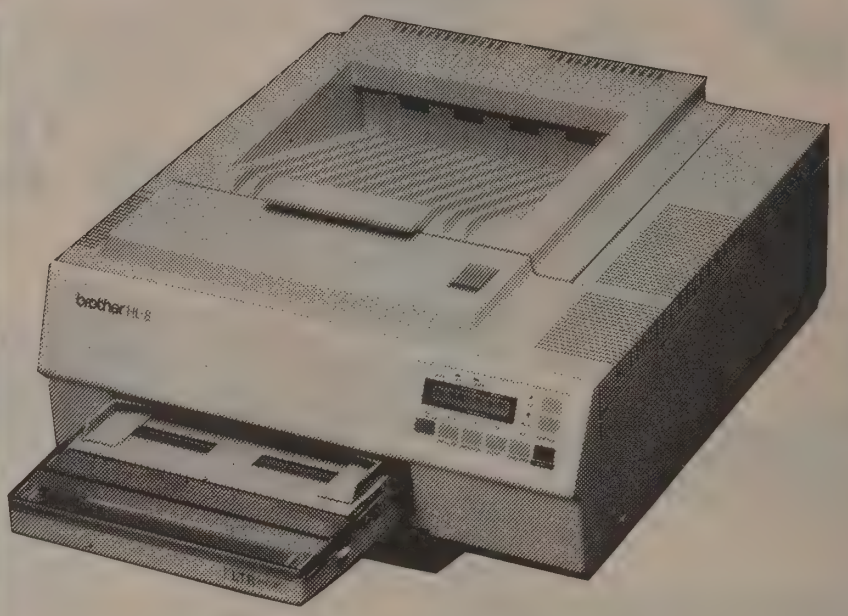

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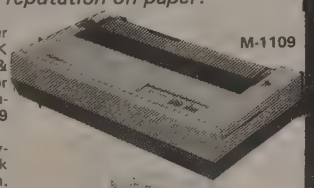

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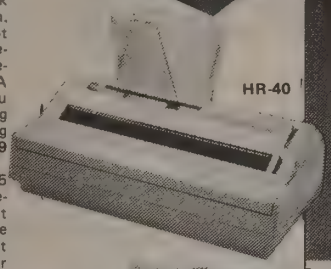

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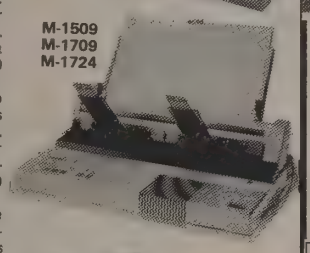

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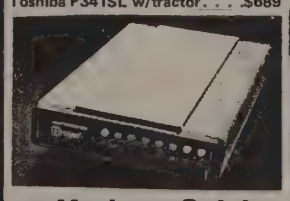

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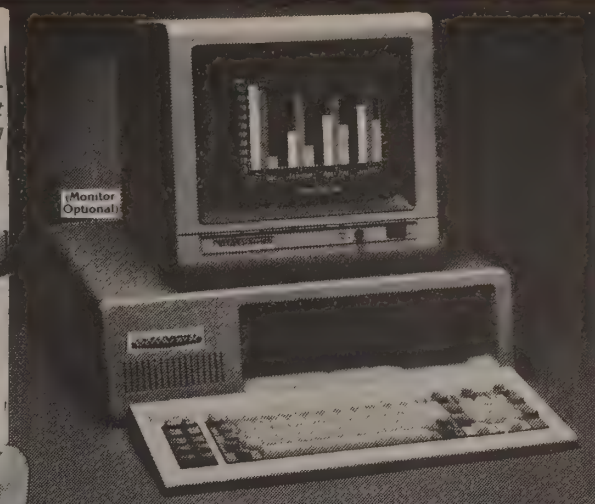

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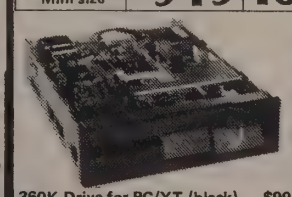

360K Drive for PC/XT (black) . $99
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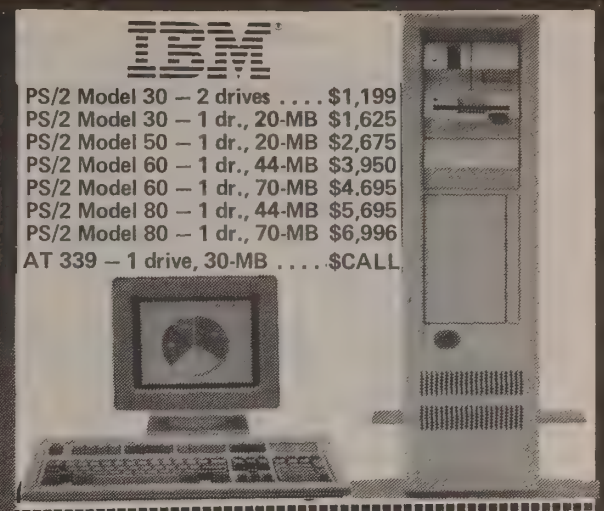

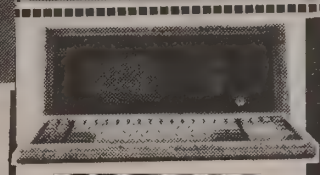

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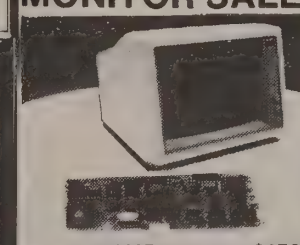

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Taxan 770 — Multisyn Color . .$545
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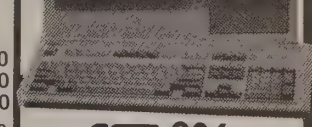

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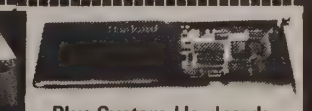

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619

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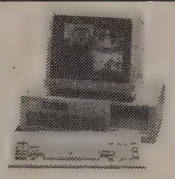

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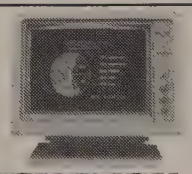

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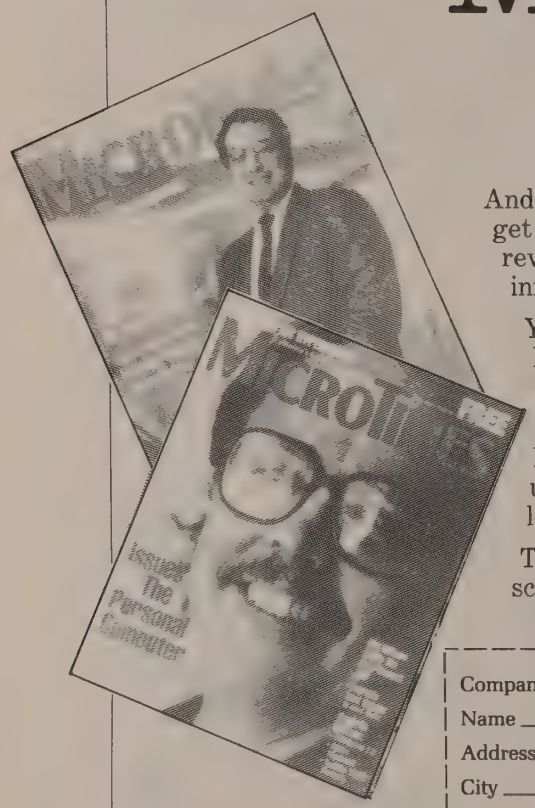

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The Mogur's EMS. (818) 366-1238. Private and public e-mail, 20 special interest group message sections, 8 database sections, 27 megabytes, upload/download with xmodem, open to all systems, operating systems and users. Numerous unique and innovative features using custom software. In operation since 5/1/81. Multiuser with two lines, 2400/1200/300 baud, 8-1-N. Sysop: Tom Tcimpidis.

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See-Your-Match. (818) 445-0691. 24 hours, 300/1200. Sysop: Mel Minami.

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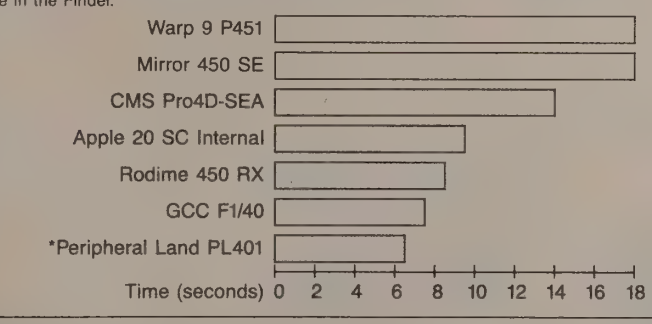
Warp 9 P451
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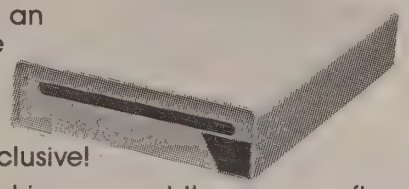

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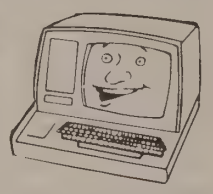

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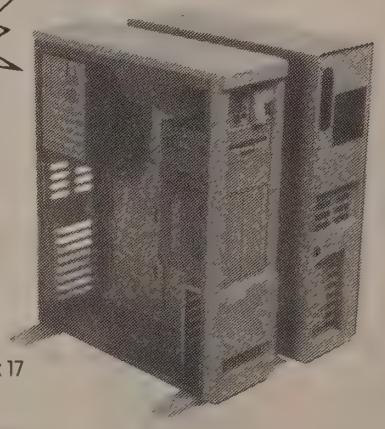

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The Adobe BBS. (818) 401-9611. 300/1200/2400 baud. 24 hours, 7 days. Message bases, Atari P/D Files.

Makom Ohr Shalom. (818) 609-1808. 300/1200 baud, 8-N-1, 24 hours. A Jewish BBS with chat mode, downloads, public boards. Religious, secular & humorous themes. Sysop: Don Goldberg (Don 1).

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Organization of Professionals, Educators, and Novices (OPEN). Tutorials, random access period, feature presentation, public domain library, and CP/M literature are all part of the monthly meetings of Osborne owners/users and MS-DOS transportables. Club BBS and newsletter. Call Frank L. Christ at (213) 498-4186 for more information. Meetings at Learning Assistance Center, CSU Long Beach, 3rd Wednesdays, 7 pm.

The North Orange County Computer Club. This group is the largest and perhaps the oldest in the county. It is affiliated with a large number of special interest groups and offers something for just about every user. General meetings are usually the first Sunday of every month in the Hashinger Auditorium, Chapman College, Orange. For info, call (714) 998-8080.

The South Orange County Computer Club. A general computer club that meets the first Tuesday of every month at 3545 Harbor Blvd., Costa Mesa. Meetings begin at 7:00 P.M.

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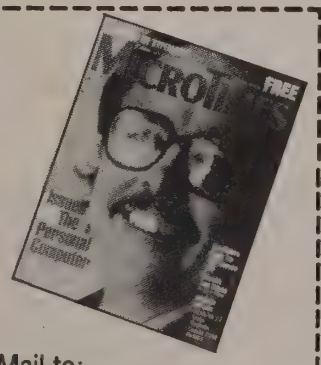

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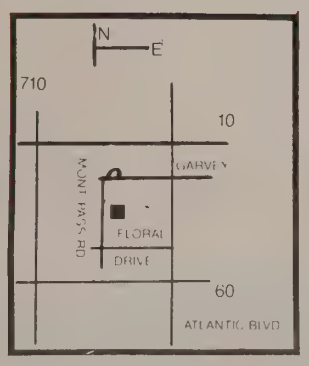

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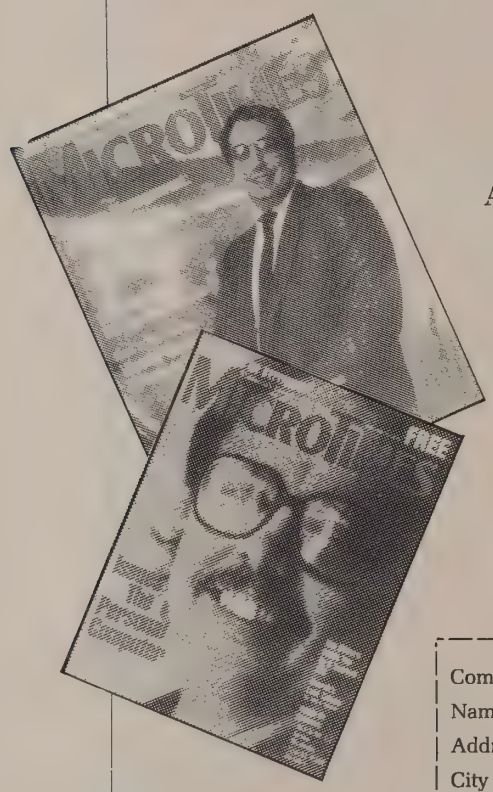

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Contact W.R. Robinson, 11850 Louise, Granada Hills, CA 91344, (818) 368-1383.

San Diego Computer Society. Umbrella organization for over 40 Special Interest Groups (SIGs). Sponsors meetings, newsletters and annual computer fair. Meetings at Mesa College, 7250 Mesa College Drive, San Diego, 11:30-4, third Saturday each month. Contact Membership Chairman, P.O. Box 81444, San Diego 92138, (619) 549-3783. BBS (619) 549-3788.

Consolidated Computer Club. Dues $25 yr. For meeting place and time send SASE to David Nussbaum, 14200 Polk Street, #53, Sylmar, CA 91342-2966, or call (818) 362-9718.

Hughes Aircraft Computer Clubs. This club is for Hughes Aircraft employees only, but the BBS is open to everyone. Upload and download boards for Macintosh, IBM, Atari, Commodore, etc. Each board has its own public message service plus general message board. Contact Bud Grove, 21111 Dolores #146, Carson, CA 90745. BBS (213) 549-9640, 300/1200 baud, 24 hrs., 7 days.

Ventura Personal Computer User's Group. All MS-DOS and PC-DOS machines. Meetings 3rd Saturday 9 am-12 noon, Foster Library, 651 E. Main, Ventura. Contact Mike Regan, President, 301 Dana Point, Ventura, CA 93004, (805) 647-8273.

Micro User's Group — SFV Board of Realtors. Meetings 7232 Balboa Blvd., Van Nuys, 7 pm. third Thursday. Contact Mary Lou Williams, (818) 786-2110 for more information.

South Bay Computer Education Group. Supporting Apple, Atari, Commodore, IBM and compatibles, and TI99/4A. Meeting 2nd Wednesday of each month. Time 7 pm at 3675 Torrance Blvd., Suite 202, Torrance, CA 90503. Contact Jack Ward (213) 530-4879 or Judy Adams (213) 540-5010.

UCLA PC Users Group. IBM PC or compatibles owners welcome to join us on the 2nd Tuesday of the month, 7 pm. Public domain library , SIGs, BBS, seminars and newsletters. NPI Auditorium, UCLA, Westwood Plaza, Level C. For more information call (213) 473-6668.

Citizens Veto. For users with an interest in socio-economic issues who might want to try their equipment in working a model of a new approach. Primarily graphics and numbers, minimal text. Ewald O. Schlachter, (415) 452-0151.

ICCA (Independent Computer Consultants of America. A nonprofit national association dedicated to the independent computer consultant. Its goals are to promote professionalism within the industry, increase awareness of ICCA to clients, and provide group benefits to members. Meets at Revere House, Tustin, 2nd Thursday, 6 pm. Contact Bill Creel, membership chairman, ICCA-OC, P.O. Box 3067, Santa Ana 92703, (714) 666-1981.

LAC-BUG (Learn About Computers — Beginner's Users Group. All computer owners and prospective owners eligible, ages 3 to adult. Educational materials and hands-on training included with membership. 24 hour telephone: (213) 372-8909. Mailing address: 6506 Arizona Avenue, Suite 127, Los Angeles, CA 90045.

Association For Women In Computing. L.A. Chapter meets on the second Wednesday of the month, 6:00 pm, at the Proud Bird Restaurant, (near LAX). Contact the Program Chair at P.O. Box 3966, Torrance, CA 90510. (213) 657-0327.

Southern California Geneological Society Workshop. Meets the fourth Saturday of the month, 4:00-6:00 pm, at the SCGS Library, 122 S. Golden Mall (rear), Burbank, CA 91502. A self-help group to provide a forum for information and experience exchanges on the use of computers in geneology. Contact W.R. Robinson, SCGS, P.O. Box 4377, Burbank, CA 91503. (818) 368-1383 or (818) 843-7247.

NATIONAL/ INTERNATIONAL

Network Users Association. 2111 Eisenhower Ave., Suite 400, Alexandria, VA 22314. (800) 638-8510 or (703) 683-8500.

TPUG World's largest Commodore Users Group. $25 annual membership entitles you to access to library of public domain software for C-64, VIC 20, PET, CBM, SuperPET, B-128. Coming soon Plus 4, C-16, C-128. New disks added each month. Also TPUG Magazine (10 per year), free access to TPUG's Bulletin Board Modem System, 24 hours, 7 days. TPUG Inc., 5300 Young St., Willowdale, Ontario, Canada M2N5R2, (416) 733-2933.

Apple Co-op. 290 SW 43rd, Renton, WA 98055. (201) 251-5222.

JUG (Jefferson State Computer Users Group). Many SIGs, newsletter. Dues $5.00 year, some SIGs additional. Contact JUG, P.O. Box 457, Gold Hill, OR 97525-0457.

MicroPro Users Group of America. National group with over 200 members worldwide. Dedicated to supporting MicroPro products, especially WordStar and InfoStar, for any hardware. c/o Procyon Associates, 140 Riverside Drive, New York, NY 10024. (212) 595-4811.

Golden Apple Club, Apple II and Macintosh. Contact Stefano Minotto, Golden Apple Club, Riviera Tiso da Camposanpiero, 26, 35100 Padua, Italy.

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PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

KAPPA (Memphis Kaypro Users Group). Meetings at 2 pm, 1st Saturday of the month, Room 2, Jennings Hall. Contact Hugh Lamar, 5983 Macon Cove, Memphis, TN. (901) 377-4140.

The AppleWorks Users Group (TAWUG). c/o Regional Rep, 27421 Berenda Way, Hayward, CA 94544, (415) 887-7499.

FORTH Interest Group, International Office. P.O. Box 8231, San Jose, CA 95155. For further information call (408) 277-0668.

Apricot User Group (APRICUG). Box 98, Malverne, NY 11565.

Spellbinder Users' Group has an international newsletter with useful macros written by members, advice on new applications, news, and word-processing problem solving. All experience levels. California members welcome. Write P.O. Box 14, Newark, Notts, England NG24 4TP; telephone (0636) 77313; telecom Gold/Dialcom Mailbox 72: MAG95610.

National TeleVideo Users Group. Meets 7:30 pm, 3rd Thursday, 1170 Morse Ave., Sunnyvale. P.O. Box 22007, San Francisco, CA 94122. Call for info—David, (415) 753-1552.

Apple Fontrix Club. Monthly newsletter. P.O. Box 29857, Thornton, CO 80229-0857.

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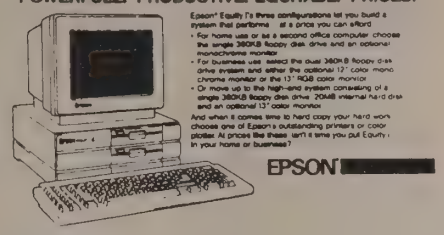

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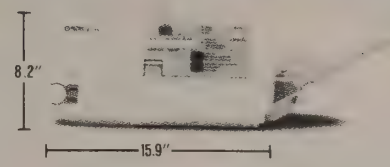

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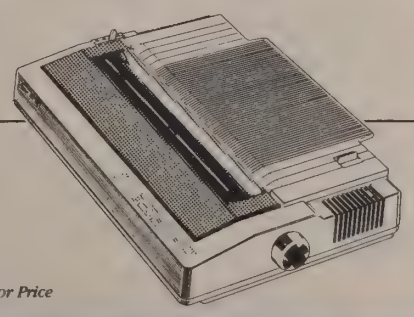

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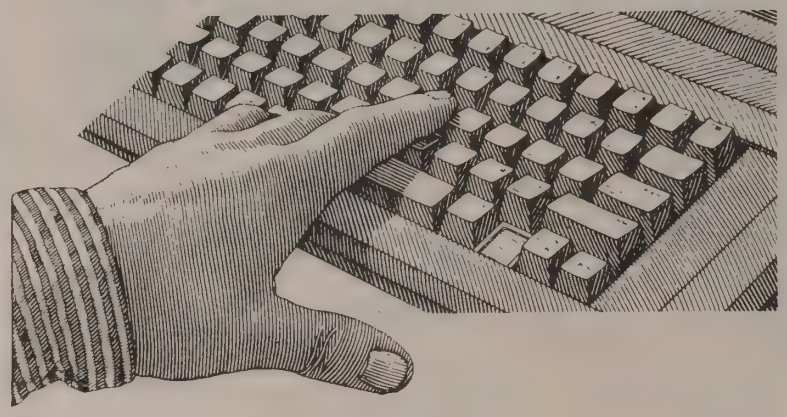

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28 Barbary Lane. Meets at 121 13th Ave. East, Seattle, WA, Fridays 8:00 pm. Contact A. Madrigal, (206) 323-2828. BBS: (206) 323-2828.

MICROenvironment: Microenvironmental Information Consortium For Researchers Overseas. (800) 323-7611. World Headquarters, 712 Avery Rd. W. Winlock, Washington 98596, USA. Micro on MCI mail, ECONET & WELL. TELEX number 6502928733 via WUI.

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Folklife Terminal Club. Almost Free Software. An international Commodore computer users group, with members in more than twelve countries, has made its software library available to other user groups and individuals. The club has issued new catalogs of software from its archives which contain more than 6,000 public domain programs. The programs are stored on diskettes and are usable in various configurations of PET, CBM, VIC, C-64, PLUS 4 and C-128 computers. The software itself is free. The first diskette that should be ordered is the new "CATALOG DISK" which contains an automatic disk cataloging program, a listing of all the available programs, complete instructions and Associate Membership in the club. There is a copying and mailing fee of $15 per diskette. Please specify which computer and disk drive you have. Contact Folklife Terminal Club, Box 555-DN, Co-op City Station, Bronx, NY 10475.

Miami PC User Group. Meets at 16400 N.W. 32nd Ave, Miami, FL. Second and fourth Wednesdays at 8:00 pm. Contact Jeffrey Feinberg, 2500 E. Hollandale Beach Blvd., Hollandale, FL 33009. (305) 457-7744.

USER GROUPS

AT&T

AT&T PC6300 Users' Group. Meetings at various locations—contact BBS for latest information. Or write Eric Levinson, P.O. Box 7364, Burbank, CA 91510. BBS (818) 954-0530, 300/1200, 8-N-1, 24 hours.

ORCA - Orange Riverside Counties AT&T 6300 UG. Meetings bimonthly, second Saturdays, 11:30 am, at 2144 Michelson Drive, Irvine. Contact Chuck Patten, 1220 Page Circle, Corona, CA 91720, (714) 851-0119, ext. 234.

ADAM

Adam Users of Southern California. Come and keep the ADAM going. We have access to some of the people who developed software for ADAM and we are going to create a base for tips, reviews, and a BBS. Get on line with ADAM. Meetings at Airport College Center, Sepulveda and Century, 4th Sunday, noon. Contact Harvey Klein, 1736 S. Bedford, LA, (213) 553-1062 or Paul Shecter, 5545 Lindley, Tarzana.

ALPHAGRAPHICS

Alphagraphics. Contact Stella or Jim Muller, 16425 Bernardo Ctr. Dr., San Diego, Ca. 92128, (619) 451-2250.

AMIGA

Amiga Friends (AF). Contact Russ Kavanagh, (714) 898-2947. Call for more information, we'll see you there!

San Fernando Valley Amiga User Group (SFVAUG). Meets 2nd Thursday of the month, 7-10 pm, at American Legion, 7338 Canby Ave., Reseda. We've got demos, SIGs, newsletter, PD library, disk of the month, ANSWERS. Bring your AMI, we have lots of room now! Contact Randy Likins, (818) 709-0932.

Bits & Pieces Amiga Group of Anaheim. Meets every Tuesday 6:30-10 pm at 1130-A N. Kraemer Blvd., Anaheim, CA 92806. C-64, C-128, Amiga. Public domain software, technical help, guest speakers, much more. Contact John Callaci or Mike Dalton (714) 630-8644/630-8711 for information.

Color America. Amiga SIG meets 1-3 pm on the third Saturday of the month at Rosemead Community Center, 3936 N. Muscatel Ave., Rosemead. For information contact Mark Randall, 2227 Canyon Rd., Arcadia, CA 91006, (818) 355-6111.

Amiga Tech Users Group #1. Meets 4th Tuesdays, 7 pm, University Union, Cal Poly Pomona. Contact Mark Randall, (818) 355-6111. Call for more information, we'll see you there!

Amiga Tech Users Group #2. Meets at Rosemead Community Center, 3936 N. Muscatel Ave., near Valley Blvd., Rosemead, 1 pm, 3rd Saturday of the month. Contact Mark Randall, (818) 355-6111. Call for more information, we'll see you there!

Inland Empire Amiga User Group (IEAUG). Meets 7 pm, 3rd Tuesday of the month, California School for the Deaf, 3044 Horace St., Riverside. Contact Paul Corbet (714) 684-6245. Call for more information, we'll see you there!

LA Amiga Users Group (LAAUG). Meets 3rd Wednesday, 7:30 pm, Veterans Memorial Auditorium, Culver and Overland Blvds., Culver City. Call (213) 387-3698 for more information. We'll see you there! BBS: (213) 559-7367.

West Side Amiga Users Group (WAUG). Meets 2nd Wednesday, 7:30 pm, John Adams Junior High School Cafeteria, 16th and Ocean Park Blvd., Santa Monica. Call (213) 451-0713, during the day, for more information. We'll see you there!

Apple/Valley Computer Club. Member interests include Apple, Amiga, IBM and others. Meetings are held on the 2nd Wednesday of each month, 7:30pm, at Valley Presbyterian Hospital, meeting room #3, 15107 Van Owen, Van Nuys, CA. For more info, contact Dr. William H. Trent, 6502 Kester Avenue, #7, Van Nuys, CA 91411, (818) 988-1752.

Ventura Amiga Users Exchange. (VAUX). Amiga users group for Ventura County. Meetings held on the second Monday of each month, 7:30 pm at the E.P. Foster Library, 651 Main Street, Ventura. Call (805) 646-7121.

AMSTRAD

West LA Amstrad. Meets every fourth Tuesday, 8:00 pm at Venice High School. Call (213) 397-7981 for further information.

APPLE

Original Apple Corps. First Apple group ever. SIGs for AppleWorks, Telecommunications, Educators, Macintosh. Meetings in the Santa Monica Mall, second Sunday of the month, 3rd floor Community room, 12 noon. Contact Rich Rollons (213) 378-0707, or Fred Duffy, (213) 396-5515.

The Orange Apple Computer Club meets 9 am-12 pm the first Saturday of each month in the Science Hall at Orange Coast College, Costa Mesa. We have over 700 members, ranging from beginners to certified Apple developers, and a large Apple II public domain software library. There are several very active special interest groups which include Apple III, educators, Apple II, modem and investors. For further info call (714) 770-1865.

Tri City Apple User's Group (Glendale, Burbank, Pasadena). Speakers, product demos, public domain library and friendly experts ready to answer any Apple II question. Meetings are scheduled the third Thursday of the month at Casa Colina Neurological Learning Center, 50 North Hill St., Pasadena at 7:00 pm. Contact Marie Kaden at (818) 846-6682.

North San Diego Apple Club. Meets 1st Tuesday of each month at Meadowbrook Middle School, Meadowbrook Lane, Poway, 7 pm. Contact Bill Walker (619) 579-9649 or Chuck Newby (619) 566-0387, P.O. Box 75, Poway, CA 92064.

SD Alllers. Want to start Apple III user group in San Diego area. Contact James Fair, P.O. Box 1592, Lakeside 92040, (619) 561-3270.

Applejacks of the Inland Empire. Primarily for Apple II users. Meets first Wednesday and third Thursday of the month, 7-9 pm, at Norman Feldheym Central Library, 555 W. 6th St., San Bernardino. Contact Scott Zehm at (714)883-2234 for information, or write Applejacks, P.O. Box 23025, San Bernardino, CA 92406.

Appleholics Anonymous of Ventura County. Software library, club BBS, newsletter, hardware and software demos. 150 members. Meetings sometimes vary—call to verify (805) 482-3501, 484-2611, 659-5326, 985-9781. Meetings 3169 Telegraph Road, Ventura, 9:30 am, usually 2nd Saturday.

Apple/Valley Computer Club. Member interests include Apple, Amiga, IBM and others. Meetings are held on the 2nd Wednesday of each month, 7:30pm, at Valley Presbyterian Hospital, meeting room #3, 15107 Van Owen, Van Nuys, CA. For more info, contact Dr. William H. Trent, 6502 Kester Avenue, #7, Van Nuys, CA 91411, (818) 988-1752.

The Driveway Group Ltd. User Group. Meets at the Bellflower Public Library. Time and date varies. We are forming a new club! Deals mainly with special interest programmers and software. We need members! We need to get started! Phone (213) 867-7724 for information.

APRICOT

Apricot Roundtable Group of Hapless Hackers (ARGHH!) An Apricot user's group is forming in east Long Beach, open to any Apricot, XI, F1, F2, F10 or FP user, or anyone else with MS- or PC-DOS and 3½" disk drives. Phone Jim Bliss at (213) 425-6302. Meetings 7–10 pm, 3rd Wednesdays or at such other time as membership decides, at 7215 Killdee St., Long Beach, CA 90808.

ASHTON-TATE

dBUG-dBASE Users Group. For all levels of dBASE users from beginners to expert. Meets 3rd Monday each month, 7-9 pm, Blue Cross Bldg., 21555 Oxnard, Woodland Hills. For more info contact Bruce Ascough, (818) 789-0723.

dBASE III SIG of UCLA PC Users Group. Meets once per month in Santa Monica—date varies. Contact Tom Rombouts, 1428 N. Curson #6, LA, CA 90046, (213) 874-7471.

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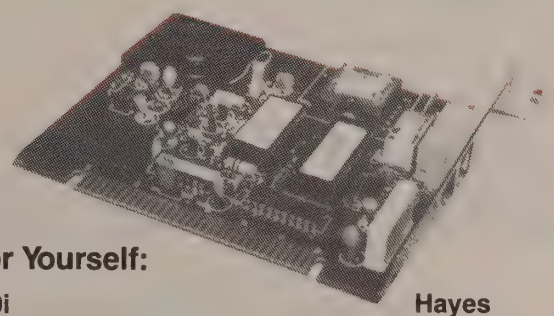

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ATARI

Atari Computer Association of Orange County (ACAOC). Join one of the biggest Atari user groups in Southern California. Monthly magazine, large public domain library, and club BBS. Dues $24.00/year, $18.00 for non-attending out-of-town members. Meetings at Golden West College, Room 131, Huntington Beach, 1 pm, fourth Sunday of the month (ST meeting same time and place on second Sunday). P.O. Box 9419, Fountain Valley, CA 92728 or (714) 838-3099 for more information.

West LA Atari Users Group. Come join fellow Atarians! Dues are $25.00/year. Newsletter, P/D library, ATR-Sig, discounts, guest speakers. Please call for directions to meeting room! If you're reading this, you belong with us. Meetings first and third Wednesday of the month, 7:30 pm, Lincoln Park, Santa Monica, Wilshire & Lincoln. Contact Bill Skurski (213) 552-4739.

Los Angeles Atari Computer Enthusiasts (LAACE). Join Los Angeles' largest and oldest Atari Users' Group, now in our 6th year. Enjoy our monthly meetings and newsletter. Participate in our educational SIG (Special Interest Groups) seminars and meetings. Learn how to get the most out of your Atari; access our hundreds of public domain programs; benefit from the help and experience available from our experts. Come as our guest on the 1st Tuesdays of the month (2nd Tues if holiday occurs in 1st week) at 7:00 pm at Granada Hills High School, 10535 Zelzah Ave., Granada Hills, CA. For full benefits, including member access to our 10 meg BBS, dues are $20/yr ($25 for entire family). Write P.O. Box 7752, Van Nuys, CA 91409 (include your phone number) for additional information. BBS: (818) 700-1652.

Santa Clarita Valley Atari Computer Enthusiasts (SCV-ACE) invite you to join us. Meetings are the first Thursday every month from 7 to 9 pm at the Moose Lodge, 18000 W. Sierra Hwy., (1/2 mile north of Soledad Canyon Road), Canyon Country. For info call Bob at (805) 259-6540.

Atari Computer Enthusiasts Network (ACENET). Umbrella group representing many Southern California Atari groups. If you can't locate a user group in your area, contact John Tarpinian at 6055 Cahuenga Blvd., #2, North Hollywood, CA 91606, (818) 760-1831.

Hooked on Atari Computer Keyboard Society (HACKS). Meetings on the first Saturday of the month in the Burbank area. For more information contact John Tarpinian, 6055 Cahuenga Blvd., #2, North Hollywood, CA 91606, (818) 760-1831.

AA-Atari Users Group. Meets at Upland Public Library, 450 N. Euclid Ave. Atari 400, 800, XL/XE group meets second Tuesday, 6-9 pm. Call Juan Valdes, (714) 980-6841 for more info. 520/1040ST group meets fourth Thursday 6-9 pm. Call Jay McCarthy, (714) 829-8722 for more information.

MAST—Mid-Cities Atari ST. Meetings at 9025 E. Artesia Blvd., Bellflower, first Sunday, 7 pm. Contact Jane Hughes, 9701 E. Artesia Blvd., Bellflower, (213) 867-0626.

South Bay Atari Computer Enthusiasts (S.B.A.C.E.). Meets 2nd Tuesdays, 7:30 pm, VFW Hall, 1865 Lomita Blvd., Lomita. Meetings consist of guest speakers from software and hardware suppliers, demos by members, q & a periods, along with current Atari rumors. Newsletter, published 6 times a year, included with $20/yr membership fee. Write S.B.A.C.E., P.O. Box 83668, Los Angeles, CA 90083, for more information, or call Dick Reaser, (213) 645-7063.

AUTOCAD

AutoCAD Los Angeles Users Group. Meetings fourth Thursday of the month (except November and December—Meetings Nov. 20 and Dec. 18), Church of Religious Science, 260 North Pass Ave, Burbank. Contact Tesfaye Abagaz, (818) 843-5770 (work).

COMMODORE

San Diego Commodore Users Group. Meets third Wednesday, 7 pm, 2557 3rd Ave. (Women's Club), San Diego. For all Commodore machines. Contact Jane Campbell, (619) 584-2872 for more information, or write: P.O. Box 86531, San Diego, CA 92138-6531.

San Fernando Valley Commodore Users Group. Meets 4th Wednesday of the month, 7:00 pm, at Mercury Savings, Sherman Way & Sepulveda.

San Luis Obispo Commodore Computer Club 1766 9th St., Los Osos, CA 93402. (805) 528-7475 BBS.

The Commodore Users Group - San Juan Capistrano. This group of C64 users meets the second Saturday of every month from 9:00 am till 12:00 at Great American Federal Savings and Loan, 32232 Camino Capo, San Juan Capistrano. For info call 496-5745.

Orange County Commodore Technical User's Group C-TUG. Orange County's Commodore user group. Club newsletter, two 300/1200 baud BBSs, door prizes, SIGs in Comal, DOS protection, data bases, wpros, and BASIC. Custom software and ROM chips, and just plain good times. Meetings at Mercury Savings and Loan, 4th and Newport, Tustin, fourth Sunday of the month, 10:30 am. Contact Ellis L. Higham, corresponding secretary, P.O. Box 8342, Orange, CA 92664, (714) 554-9222.

Hollywood User Group (HUG) for Commodore computers. Meets 2nd Saturday of the month at Plummer Park, Conference Room, 7377 Santa Monica Blvd., West LA at 12 noon. Contact HUG BBS (213) 874-8256 (24 hrs) or write HUG, P.O. Box 38313, Hollywood, CA 90038.

Southern California Commodore Users Group. Learn more about your Commodore 64. Extensive public domain disk library. Meet at Mid Cities Bank in Gemco shopping center in Bellflower, on the corner of Artesia and Lakewood Blvds. 7 pm, 3rd Tuesday of every month. Contact Dan Klaffke, 11018 E. Rosecrans Ave., Suite 203, Norwalk, CA 90650. (213) 864-2874.

C-128 West UG. User group for owners of the Commodore C128, from beginner to advanced; PD software available. New group still assessing the needs and interests of members. Intend to network with other user groups on C128 software. Meetings 2nd Tuesday, 7:15 pm, McKinley School in Santa Monica, Santa Monica Blvd. and Chelsea. Contact Don Campbell (213) 828-9308.

Inland Empire IBM/C64 User Group. Major subjects are local area networks, small business software, data communications. Send SASE for free newsletter with dates and software library. Contact Winfried Hofacker, P.O. Box 988, Chino Ca 91708-0988.

Commodore Creations Users Group (CCUG). We offer library, newsletter, and other services; upcoming BBS; soon to be member of Commodore World. Meets 2nd or 3rd Sunday of each month 2-4 pm. Membership dues $26 per year. Call or write for info: Brian R. Klotz, 1135 Coronet Ave., Pasadena, CA 91107 (818) 351-8198.

Back-Country Commodore Club. Meets first Thursday 7 pm, Ramona Lutheran Church on 14th St. Check us out for relaxed, informative group discussions. We're here to help those with problems and to promote better uses of Commodore 64s, 128s, and Amigas. Contact Gerry White at (619) 789-3209, 511 14th St. #D-13/ P.O. Box 373, Ramona, CA 92065. Meetings at 617 16th St., Ramona, CA 92065, 7 pm, 1st Thursday each month.

General Dynamics Commodore Computer Club. Meets third Tuesdays, 4:30 pm, Convair Rec. Assn. room C. Commodore 64 and 128 only. Contact Al Wilson, (619) 429-6790 for information.

C.U.B.E. Commodore Users, Buffs, and Enthusiasts meet first and third Mondays of each month, 7:30 pm, East Side Christian Church, 668 Obispo, Long Beach. Contact Ted Lynch, P.O. Box 20288, Long Beach, CA 90801. (213) 435-4815.

Com-Pacs. Meetings and/or copies of public domain software and discussion of problems. New computer C64/128 technologies. Sales and swaps of equipment. Meetings at 2354 Elmgrove St. Los Angeles, CA, Saturdays, 3 pm. Contact Lon Damiani, (213) 222-2277.

PLUG (The Plus/4 Users' Group). Dedicated solely to support of the Commodore Plus/4. No regular meetings, 200 members in US, Canada, Mexico, and Europe. Newsletter, public domain software library. P.O. Box 1001, Monterey, CA 93942.

Pacific Computer Club (Commodore). Meetings 391 S. Madison, Pasadena, 2nd Thursday, 7 pm. Contact Norman Sauppe, (818) 792-9840.

FCUG/SixtyFourum. PD library, newlsetter, meeting 3rd Saturdays, 8:30 am. Contact George Bearden, P.O. Box 16098, Fresno, CA 93755, (209) 291-7053. BBS (209) 431-6288.

Central Coast Commodore Users Group. Meets 3rd Tuesday of each month. Contact Gilbert Vela, 4237 Plumeria Ct., Santa Maria, CA 93455. CCCUG BBS (805) 934-2216, 24 hrs/7 days, 300 baud, Punter BBS protocol for downloads.

Diamond Bar User Group (DBUG). The Diamond Bar User Group is dedicated to the Commodore line of computers, C64, C128, and the Amiga. The club has a large public domain software library base, especially Commodore CP/M. Free raffles, technical discussions, software demonstrations, and the monthly freebie disk can be found at most any meeting. Meetings 2nd and 4th Wednesdays, 7 pm, Diamond Bar Library, 1061 S. Grand Ave., Diamond Bar, CA. Contact David Dietzel, (714) 947-1882 for more information.

South Orange County Commodore Programmers and Users (CPU). Meetings at Great American Savings, 23688 El Toro Road, El Toro, third Saturdays, 9 am. Contact Don Gribble, President, 25401 Champlain Rd., Laguna Hills, CA 92653, (714) 830-2430 or (714) 855-8320.

West Orange County Commodore User Group. Meetings 1st Sundays, 1 pm, Mercury Savings, Buena Park, corner of Valley View and Lincoln. Write for info: P.O. Box 6441, Buena Park, CA 90622; or call Mark Stanford, (714) 772-4182 or Art Collins (714) 821-0195.

Bits & Pieces Amiga Group of Anaheim. Meets every Tuesday 6:30-10 pm at 1130-A N. Kraemer Blvd., Anaheim, CA 92806. C-64, C-128, Amiga. Public domain software, DOS classes, technical help, guest speakers, newsletter and much more. IBM group meets first and third Saturdays of the month at 10:00 am to 2:00 pm. Sponsored by Transnational Electronics. Contact John Callaci or Mike Dalton (714) 630-8644/ 630-8711 for information. BBS: (714) 630-5619.

The Pasadena Commodore Computer Club meets the first and third Wednesday of the month at 7 pm in the Circadian Room of the cafeteria on the campus of Pasadena City College, SE corner of Colorado and Hill. For more information write to PCCC, P.O. Box 1163, Arcadia, CA 91006, or call (818) 447-2212 after 2:30 Pacific time.

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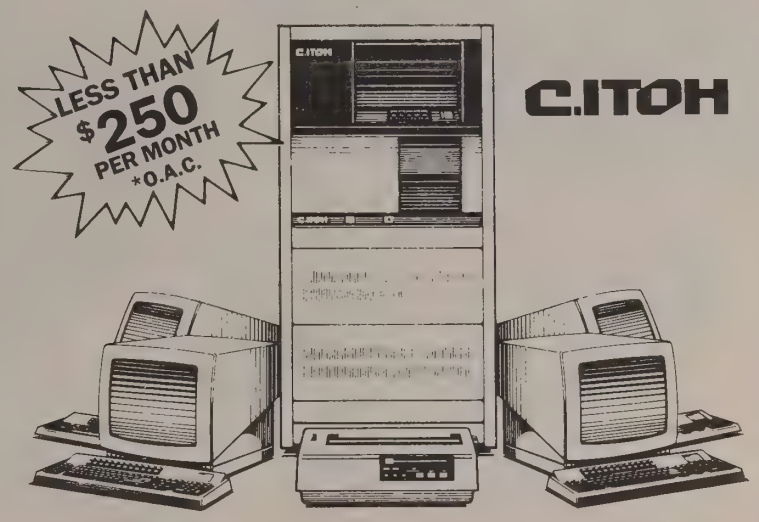

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Commodore Helpers User Group Of Long Beach.(CHUG). Meets second Saturday of each month, 9:00 am to 12:00 noon at Mercury Savings Bank, 4140 Long Beach Blvd. Dues $12.00 a year. Visitors and families welcome to attend. Support the C64, C128 and Amiga. Q-Link, SIG and more. Newsletter distributed at meeting. Demos and more. We welcome people who need help with their Commodores. Free disk for members at each meeting. Soon to come: area BBS for users and professional software demos. If you have any questions call Rodney Hayes, president, at (213) 863-8420, from 6:00 pm to 10:00 pm, M-F.

Success. Commodore group meets at 18th and Oak, Paso Robles, CA on the second Tuesday of the month at 7:00 pm. Contact Wayne Weichel (805) 238-6294 for information.

East County C64 Owners (ECCO). Meets at Coleman college in San Diego at 7:00 pm on the first and third Fridays of the month. Contact Gary Bell at (619) 561-4245.

GEOS Users. Dedicated solely to helping Commodore owners learn more about GEOS for the C64 and C128. All information and disks exchanged by mail. Membership is $20 per year. Our first GEOS applications diskette and monthly newsletter is included with membership. Please specify which computer and disk drive you have. Contact: GEOS Users, 21634-A Belshire Ave., Lakewood, CA 90716.

CORDATA

Cordata Users Group. Meets 2nd Fridays, 7 pm. 20630 Lassen St., Chatsworth. Contact Alicia Fahey, (818) 709-6202 for information.

CP/M

CP/M SIG. Meets first Sunday of the month, 10:30 am, at Chapman College. Contact Barry Cole (213) 390-3851. BBS: (714) 998-8080.

DEC

DECUS Inland Empire PC-LUG Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software /applications assistance available; FIDO bulletin board. Meets Cal Poly-Pomona campus, Library Bldg 15, Room 12, 7:30 pm 3rd Tuesday of each month. Contact Jan Snyder, 380 Verona St., Upland, CA 91786, (714) 620-7511 ext. 4376.

DECUS Southern California PC-LUG. Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software/applications assistance available; FIDO bulletin board. Meets 10:30 am, 1st Saturday of the month, Press Telegram Bldg., 3rd Floor, 604 Pine Ave., Long Beach, CA. Contact Bill Davis, 1457 W. 219th St., Torrance, CA 90501. (213) 827-4600.

DECUS Rainbow Pacific PC-LUG Digital Equipment Computer Users Society. Free to all DEC users; Decmates, Rainbows, Professionals; P/D software; guest speakers; software /applications assistance available; FIDO bulletin board. Meetings at Digital Equipment Corporation, 6101 W. Centinela Ave., Culver City, CA 90230, 7 pm, 2nd Wednesday of each month. Contact Don Braums, 3312 Summertime Lane, Culver City, CA 90230, (213) 202-1784.

EASYBUSINESS

Easybusiness Systems Users Group. CPAs, Consultants, and other business people interested in Computer Associates Easybusiness Systems' Accounting Software. For information, contact Gary Robinson (213) 398-6544.

EPSON

Cursor Club Epson 402 W. Arrow Highway, Suite 6, San Dimas, CA 91773. (714) 559-8361, Bulletin Board: (714) 592-6316.

San Fernando Valley Epson User Group. Meetings at Fallbrook Square Community Room "The Meeting Place" off the Food Court in the new Fallbrook Mall, 6633 Fallbrook Ave., Canoga Park, between Victory and Vanowen. Meets 3rd Wednesday of each month at 7 pm. Contact Pat Denslow, (818) 881-4029 for information.

Epson Users Group of Orange County. 6075 Jeffrey Mark St., Cypress, CA 90630, (213) 414-4817.

Epson Users of San Diego. P.O. Box 87448, San Diego, CA 92138, (619) 560-7604.

High Desert Epson Users Group. 933 Cottonwood Drive, Barstow, CA 92311, (619) 256-3541.

PSC/QX. 2934 Wilshire Blvd., Santa Monica, CA 90403, (213) 453-4535, Bulletin Board: (213) 474-4952.

Scuth Bay Epson Users Group. 1115 Cerise Avenue, Torrance, CA 90503, (213) 328-9916, Bulletin Board: (213) 618-1940.

Epson Computer Club of America. Monthly meeting 2nd Saturday of the month at 10 am, Mercury Savings and Loan, Irvine Blvd. one block east of Newport Ave. Messages Epson West Bulletin Board (714) 630-7104 User area B:15. Monthly newsletter "The Help Key." Contact Roy Boorman, 4021 Winterhaven St., Yorba Linda CA 92686, (714) 524-9483.

Epson User's Group of Orange County. Meets on 3rd Saturday of the month from 10 am to 12 noon at 2111 Main Street, Huntington Beach, CA 92648. Contact Richard A. Petersen. 7282 Mast Dr., Huntington Beach, CA 92646. (714) 536-6979.

FORTH

FORTH Interest Group, Los Angeles Chapter. Meets 4th Saturday, 10 am, Hawthorne Public Library, 12700 S. Grevillea, Hawthorne. Contact Phil Wasson (213) 649-1428.

FORTH Interest Group, Orange County Chapter. Meets 1st and 4th Wednesdays, 7 pm. Call Noshir Jesung for info. (714) 842-3032.

FORTH Interest Group, San Diego Chapter. Meets weekly, Thurs., 12 noon, contact Guy Kelly (619) 268-3100 ext. 4784.

HEATH

Los Angeles HUG (Heath Users Group). A support group for users of Heath/Zenith computers. Monthly speakers, software library, information exchange, newsletter. Meetings open to visitors. Meetings at 2309 S. Flower St., LA 90007, first Thursday of each month at 7 pm. Call Tom Davis for information at (213) 462-2642.

LUV-A-HUG Heath /Zenith User's Group. Meets 2nd Thursday of each month, 7pm, at Heath /Zenith Computers and Electronics, 22504 Ventura Blvd. Woodland Hills, CA 91364. A users group dedicated mainly to the Heath/Zenith line of computers, but anyone interested in computing is welcome. Dues are $12/yr, which includes group newsletter and copying of public-domain software from extensive library of PC-, Z-100, and CP/M compatible software. For more info contact John Rotondi, between 10:00 am and 6:00 pm at (213) 874-9344. BBS (818) 772-0384.

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LA-SCRUG. Hewlett - Packard Series 100 business computer user group. Demonstrations and seminars on HP software and equipment. Meetings at 5161 Lankershim Blvd., North Hollywood, 7-9 pm, 2nd or 3rd Thursday of the month. Contact Dave Mark, P.O. Box 60975, Pasadena, CA 91106, (818) 794-4969.

Hands-On Computer User Society (HOCUS). Meets the 1st and 3rd Thursday of the month, 6:30 pm, at 473 E. Colorado Blvd. Pasadena, 91101. Informal, hands-on problem-solving using various HP personal computers. Contact Dale Thorn c/o Logic Tree Computer Center, 463 E. Colorado Blvd., Pasadena 91101. (818) 440-9279.

PPC Personal Programming Center. Current interests include HP-41c, HP-71b and HP 28c. Meeting times and locations vary and are announced on the bulletin board. BBS number (213) 978-0024. For more information contact Emmett Ingram at (213) 498-2472.

IBM

The Greater South Bay IBM PC Users Association. Any L.A. area PC or compatible owners are welcome to attend these meetings at the TRW cafeteria on Compton Blvd. Meeting time is 7:00 pm on the third Thursday of each month. For info call (213) 532-2123.

Technical Users Group (TUG-NET). For CP/M & MS-DOS PC users. Meets on the first Thursday of each month at 7:00 pm. Valley Plaza Park, Community Room, 12240 Archwood St., North Hollywood, CA. Contact Mike Faith - (818) 994-6567. DOS SIG meets 3rd Mondays, 7 pm, Sears S&L, Van Nuys. Call (818) 701-0512 for information. BBS (818) 882-6045.

UCLA PC Users Group. IBM PC or compatibles owners welcome to join us on the 2nd Tuesday of the month, 7 pm. Public domain library , SIGs, BBS, seminars and newsletters. NPI Auditorium, UCLA, Westwood Plaza, Level C. For more information call (213) 473-6668.

Pasadena IBM User's Group. Meets 3rd Wednesday of each month at Cal Tech, Bridge Building, Room 201. For more info send SASE to Steve Bass, 711 E. Walnut Street #306, Pasadena, CA 91101, (818) 795-2300.

Inland Empire IBM/C64 User Group. Major subjects are local area networks, small business software, data communications. Send SASE for free newsletter with dates and software library. Contact Winfried Hofacker, P.O. Box 988, Chino Ca 91708-0988.

The Foothill Computer Club. An IBM-PC users group. CCCUG — Crescenta-Canada-Compatible Users Group. P.O. Box 1265, La Canada, CA 91011, (818) 790-6672. Meetings 1st Wednesday of the month at 6:30 pm at the Glendale Federal Bank, 2350 Honolulu, Montrose, CA. For newsletter send SASE to above address.

NOCCC Lotus & Business SIG. Subgroup of North Orange County Computer Club. Meets first Sundays at Chapman College in Orange, CA, 11:15 am. Lotus 1-2-3 and business application demos, speakers. Call to verify dates, address: Vance Joachim, (714) 998-8080. P.O. Box 3616, Orange, CA 92665.

The Riverside IBM Computer Club. Meetings at Computerland Riverside, Monday 7 pm. We specialize in software demonstrations, sharing of public domain programs, and mutual problem solving activities. Contact Jimmie E. Heidecke, (714) 685-5407 for info.

Orange Coast IBM PC User Group. A not-for-profit organization open to anyone with or considering the purchase of an IBM PC or compatible computer.

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Monthly meetings, usually on the last Saturday of the month, consist of one or two guest speakers, a short business session and a period for random access. OCIPUG has public domain and user supported software, a monthly newsletter and a bulletin board. Membership is $20 per year. Meetings at Orange Coast College, Science Hall, Costa Mesa, last Saturday of the month, 9 am–12 noon. Contact Tom Sutro, P.O. Box 6100-211, Costa Mesa, CA 92628, (714) 850-0474.

Valley Computer Club. IBM PC Users Group meets first Wednesday each month. The group is part of Southern California's original computer club. Its purpose is to distribute public domain software and exchange info on the PC. Meetings at 2006 W. Magnolia Blvd., Burbank, 7 pm. Contact Aaron Epstein (818) 769-1837.

Kern Independent PC User Group (KIPUG). Meets the 2nd Thursday of each month beginning at 7 pm at the County Superintendent of Schools Boardroom, 5801 Sundale Ave., Bakersfield. Contact Jim Harrer, P.O. Box 2780, Bakersfield, CA 93303, (805) 395-0223.

Bits & Pieces IBM of Orange County. Meets at 1130-A N. Kraemer Blvd., Anaheim, every Saturday at 10 am. Call John, (714) 630-8644 for more information.

Ventura Personal Computer User's Group. All MS-DOS and PC-DOS machines. Meetings 3rd Saturday 9 am-12 noon, Foster Library, 651 E. Main, Ventura. contact Mike Regan, President, 301 Dana Point, Ventura, CA 93004, (805) 647-8273.

Thousand Oaks Personal Computer Club (TOPCC). Meets fourth Thursday, except November and December (3rd Thursday), at CAL Lutheran Univ., 60 W. Olson Road, Thousand Oaks. 6:30 pm beginners, 7:30 regulars. Group is five years old and has approximately 150 members. Contact Bob Tracy, (805) 482-7092 for more information. BBS: (805) 499-8378.

Southwest PC Users Group. All computer users are welcome. Meetings 3rd Saturday of each month; call for meeting place. Christine Tripp, (213) 935-4105.

Tulare County PC. Meetings at Genesis Computers, 3rd Thursday each month. Call Roger Jenan, (209) 733-8204 for information.

Claremont Computer Club. This club is for any interested IBM PC or compatible users. Meetings start at 7:30 pm on the 3rd Monday of the month. Call (714) 626-2268 for meeting location and information.

Apple/Valley Computer Club. Member interests include Apple, Amiga, IBM and others. Meetings are held on the 2nd Wednesday of each month, 7:30pm, at Valley Presbyterian Hospital, meeting room #3, 15107 Van Owen, Van Nuys, CA. For more info, contact Dr. William H. Trent, 6502 Kester Avenue, #7, Van Nuys, CA 91411, (818) 988-1752.

Osborne Komputer Owners Klub (OKOK) is a microcomputer user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings second Wednesday of the month, 7:00–10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Pasadena IBM PC Users Group. Meets third Wednesday of each month at Cal Tech Bridge Bldg., Room 201. Contact Steve Bass, 711 E. Walnut Street, Pasadena, CA 91101. (818) 795-2300. Send SASE.

Long Beach IBM Users Group. Meets second and fourth Wednesday of each month at 4601 E. 2nd Street, Belmont Shores. Contact Noel Roberts, president, 153 Argonne Ave., Long Beach, CA 90803. (213) 438-6515.

KAYPRO

Lakewood/Long Beach KUG is a group of Kaypro computer owners dedicated to helping each other solve problems and share information and public domain software. The meeting is open to all. Meetings at Midcities Bank, 9025 Artesia, Bellflower, CA, 2nd Wednesday of each month; 7 p.m. Contact Melvin Pasley, 4566 Shadeway Rd., Lakewood, CA 90713, (213) 421-3094.

Kaypro UG, 3134 N. Palm Shields, Fresno, CA 93704.

K-West, Orange County Kaypro users group. Meetings 2nd Monday of the month, Glendale Federal Savings, 100 Newport Center Drive, Newport Beach.

Club 16. Meets once a month in Costa Mesa at 2790 Harbor Blvd., (CBS Store) to share knowledge of the 16 bit world. It is a small group so that everyone can get to know each other and share. Large public domain library. Contact Peggy Lloyd, (714) 645-9868 for information.

LA Kaypro Users' Group. Primarily CP/M users, all brands welcome. Meets 3rd Tuesday, 6:30-9:30, Beverly Hills High School, 241 Moreno Ave., 3rd floor cafeteria, near Olympic and Spalding. Contact Ailyn Franklin or Barry Cole, (213) 278-3748 or (213) 390-3851 after 11 am please.

Kayos Kaypro Users Group. Kayos Kaypro User Group invites Kaypro and CP/M users to meetings at TRW in Redondo Beach, 6:30 pm, third Monday of the month. (213) 379-8339 for details.

TUG-NET Kaypro and Osborne SIG meets 4th Thursdays, 7 pm, Central Savings, 4464 Van Nuys Blvd., Sherman Oaks. Call (818) 882-1693 for information.

Osborne Komputer Owners Klub (OKOK) is a microcomputer user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG, we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings second Wednesday of the month, 7:00–10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Kaypro SIG. Meets on the first Sunday of the month, 1:30 pm, at Chapman College. Contact Tom Gramafa (714) 995-9227. BBS: (714) 998-8080.

LEADING EDGE

OCTIPUG-SIG. Forming Leading Edge user's group. Will organize to teach DOS, Framework, d-BASE III, utilities and public domain software. Meeting times and address to be announced. Contact Michael Banyacki, 24992 Spadra Lane, Mission Viejo, CA. (714) 770-3172. Leave name and phone number.

LOTUS

Los Angeles Lotus Users Group. Demonstrations, problem-solving, third-party applications, etc. For Lotus 1-2-3 and Symphony. Informal and fun. 7–9 pm, Burbank church of Religious Science, 3rd Thursday each month. Take 134E to Pass, N. 1 block. Call Don Roark, President, (818) 905-1441 for information.

MACINTOSH

Los Angeles Macintosh Group (LAMG) Be a part of the best Mac group in So. Calif. Many SIG and local groups to choose from including desktop publishing, OMNI, business, education and more. Monthly main meeting at McKinley Elementary School, Santa Monica Blvd. at Cloverfield, Santa Monica. Membership $25 annually includes 12 issues of MacDigest newsletter, access to public domain library, discounts at local stores. Call Eric Anderson, (213) 278-LAMG for information.

Ventura County Macintosh Club Mac and Lisa users invited. Membership $21/yr.; newsletter, software library, discussions and ideas. P.O. Box 7754, Oxnard, CA 93031, (805) 983-1610, (805) 499-2824.

Mac Valley Users Group. For $20/yr. membership fee you too can enjoy meetings chock full of software/hardware presentations, public domain software library, Mac articles index, software and accessory raffles, and help hotline. Broad range of users, very friendly to novices. Meetings at Burbank High School Cafeteria, Burbank Blvd. at 3rd St., Burbank, CA, third Tuesday of the month, 7:30 p.m. Contact Ruth Stever, P.O. Box 4297, Burbank, Ca 91503, (818) 848-1277.

MAC-HACers. Macintosh computer club for Hughes Aircraft employees only. Meetings 3rd Wed. each month, H.E.S.E.A. Club House, 1216 Imperial, El Segundo, CA 90745, across from LAX, 5 pm. Contact Bud Grove, (213) 606-2212, 5am-3pm, (213) 549-9664.

Orange Apple Macintosh Group. The Macintosh Meeting of the Orange Apple Computer Club meets 1 pm-4 pm the 1st Saturday of each month in the Science Hall at Orange Coast College, Costa Mesa. We have the best of the public domain software for the Mac, and several fun special interest groups which include Fast Start, Mac Modem, and Deciphering Mac Public Domain. For further info, call (714) 770-1865.

Mac Orange. Monthly newsletter, special intrest groups, monthly meetings, $20 annual dues. Meetings 3rd Wednesday of each month, 7:30 pm, Johnson Center, Santa Ana College, Bristol at 17th. Novices SIG meets at 7:00. For info write Box 1830, Santa Ana, CA 92701, or call (714) 542-9753.

MacBuddhist. Learn about computer assisted dharma study and application to daily living. Network of on-line Bodhisattvas sharing material crossing sectarian lines. Monthly meetings, last Saturday of the month. Write: 2605 N. Beachwood Drive, Los Angeles, CA 90060, (213) 464-3599.

Corporate User Groups SIG of Los Angeles Macintosh User Group establishes communication between leaders of Macintosh User Groups of companies in the greater Los Angeles area. The main purpose of the group is to share information on Macintosh use in corporations. It also consults company recreation clubs in starting and supporting company Macintosh groups. Contact Charles Shipp, (213) 970-6300w, (213) 833-9186h, for more information.

San Gabriel Valley Mac Users Group. Meets once a month to disseminate information about the Macintosh. Meetings are held on the first Thursday of every month at the City of Hope in Duarte, 7:30 pm in cafeteria complex Room B. The SGVMUG has special interest groups such as Power Users' SIG and a Novice SIG. Public domain library, monthly newsletter. Membership is $20 per year. Contact Frank Chavez on the 24 hour information line (213) MUG-ICON, or write SGVMUG, P.O. Box 792, Sierra Madre, CA 91024.

Macintosh Computer Society. General meeting on the 1st Thursday of each month at 23 Civic Center Drive, Northwest corner of Santa Ana Blvd. and Rose Street. Meeting time 7:30 pm. Membership $20.00 per year. FREE help / education meetings on the 2nd and 3rd Tuesday of each month at Progressive Savings 19900 Beach Blvd., Huntington Beach, 7:15 pm. Our huge library contains the best of Public Domain software for all the Mac family. For further info, call Robert at (714) 840-1238 or mail to 17661 Falkirk Lane, Huntington Beach, CA 92649.

Rockwell International Macintosh Users' Group (RIMUG). Meets 1st Tuesday of each month 12 noon at 2770 E. Carson St., Lakewood, CA. Al Nercessian, president. 8511 Beverly Pk. Pl., Pico Rivera, CA 90660. (213) 420-4819.

South Bay Apple Mac User Group. Meets last Wednesday of the month, 7:30 pm. Contact Gary Fortune at (213) 316-7738 for information. BBS: 534-4311.

MORROW

West LA Morrow User's Group /The Morrow Minority. 40 dedicated members, with special emphasis in WP; PD library. No dues, but $1 at door to pay for refreshments. Some classes and informal newsletter. If new, call to reserve space: Dr. Bernice Ennis, (213) 276-9096, 1833 Franklin Canyon Dr., Beverly Hills, CA. Meetings 2nd Wednesday of the month.

LA Morrow User Group. Meets 3rd Thursday each month, North Hollywood Recreation Center, 11430 Chandler Blvd., North Hollywood. Contact Jack Byers, (818) 347-7283 for information.

NEC

Orange County NEC Users Group (OCNUG). Dedicated to NEC-APC computers, CP/M-86 & MS-DOS. Always room for any experience level. Meets 3 pm, third Saturday of the month. 6642 Lenore, Garden Grove. CA 92645. Call John Bingel at (714) 897-7656 for more info.

The Los Angeles Area NEC APC Users Group meets on the first Saturday of each month at 3 pm at the I/O Interface Computer Mart, 6241 West 89th St., Los Angeles, CA 90045. Telephone (213) 410-9824. There is no meeting in January, and occasionally a meeting may be cancelled or postponed, so it is best to call before coming.

NETWARE

Orange County Network Users Group (OCNET). All users, consultants and business people interested in learning and sharing information about Netware are invited to join. We're now meeting on the second Monday of each month at First American Title, Santa Ana, CA. For more information call Mark at (714) 955-0616.

OLIVETTI

Olivetti PC User Group forming. Send SASE to Stan Cory, 29500 Heathercliff Rd. #86, Malibu, CA 90265, or call (213) 457-3879.

OMNIS 3

Omnis 3 User Group. Meets every third Wednesday of the month at Grant St. Elementary School in the auditorium. Address is 2368 Pearl St., Santa Monica. Time is 7:30 pm. The use of Omnis3 and Omnis 3+ in data processing information management systems is covered, from setup to advanced features. Expert and novice welcome. Call Zachary Sempers at (818) 701-1355 for information.

OPEN SYSTEMS ACCOUNTING

Open Systems Accounting, SoCal User's Group. OSASCUS would like to extend an invitation to users, consultants and business people interested in sharing information regarding OSAS. We'll discuss OSAS, single user and networked systems and more! We meet on the fourth Wednesday of the month at Wyle Laboratories, Irvine, CA. For more information call Mark at (714) 955-1724.

OSBORNE

TUG-NET Kaypro and Osborne SIG meets 4th Thursdays, 7 pm, Central Savings, 4464 Van Nuys Blvd., Sherman Oaks. BBS (818) 882-6045, 8-N-1, 1200 baud, 24 hours.

Osborne Komputer Owners Klub (OKOK) is a microcomputer user group serving a variety of computers: Osborne, Kaypro, Commodore C128, IBM and clones. As an affiliate of FOG, we serve both MS-DOS and CP/M operating systems. We offer monthly meetings, classes, public domain software library, electronic bulletin board and special purchase opportunities. Meetings *second* Wednesday of the month, 7:00–10:00 pm. Meetings held at the Altadena Public Library, 600 E. Mariposa, Altadena, CA. Contact Lionel Soracco, (818) 794-3243, or write OKOK, P.O. Box 40429, Pasadena, CA 91104.

Osborné National Users Group meets 2nd Fri./mo. at 7:30 pm at Wizard of Oz, 20630 Lassen St., Chatsworth, CA 91311. Contact Art Schiefstein, (818) 709-6969.

PARADOX

Southern California Paradox Users Group. Anyone with an interest in the relational database Paradox please send an SASE to Brian Smith, 350 Palos Verdes Blvd., Redondo Beach, CA 90277. Meetings are being held in LA and Orange County.

RADIO SHACK/TRS

South Bay Color Computer Club TRS-80, TDP-100, Dragon. Meets third Friday of the month at Mercury Savings, 22939 Hawthorne Blvd., Torrance. Info: Andrew Corlett, 1435 W. 172nd St., Gardena, CA 90247. (213) 538-8394.

OCTUG-Orange County TRS-80 Users Group. Meets the 3rd Sunday of each month in the community room at "The City Shopping Center" in Orange. The room is near the green entrance of the mall (N.E. corner). MS-DOS SIG (Special Interest Group) begins at 11:30 am. General meeting begins at 1:30 pm. Devoted to the Tandy line of computers and compatibles. Come on down and see what it's like. For more info, contact Franco Collino, (714) 750-0887.

San Gabriel Valley TRS-80 Users Group. Supporting users of TRS-80 and Tandy computers. Meets 2nd Friday of each month at Arcadia Park Senior Citizens Center at 7:30 p.m. Monthly newsletter, various SIGs, lotsa fun & info. Contact Dan Dresselhaus. (818) 914-5831 days.

VTUG (Valley TRS-80 User Group). Devoted to users of TRS-80 Model I, II, 4, 4P, LNN or MAX-80. Speakers, presentations, raffle drawing, refreshments. No admission or membership fee, new members welcome. Meetings at Glendale Federal Savings, 7129 Topanga Canyon Blvd., Canoga Park, 3rd Thurs., 7:30 pm. Contact Fred Blechman, (818) 346-7024.

VTHG Valley TRS80 Users Group. Meets first Friday of the month at 7:30 pm, Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. One block south of Vanowen St. Four blocks west of Laurel Canyon Blvd. RAM SECTION, bring all the questions, ideas and information that you have and share them. ALSO, don't forget to bring your blank diskette to exchange for the new club disk from Eric. For more information call (818) 982-0467 or write P.O. Box 9747 North Hollywood, CA 91609.

COCO 1-2-3, Color Computer, Models 1,2,3. Meets second Friday of the month at 7:30 pm, Valley Plaza Recreation Center, 12240 Archwood St., North Hollywood, CA. One block south of Vanowen St. Four block west of Laurel Canyon Blvde. RAM SECTION, bring all the questions, ideas and information that you have and share them. ALSO, don't forget to bring your blank diskette to exchange for the new club disk from Paul For more information call Harry Tischler (818) 997-6000 or write 7560 Woodman Pl. No. E8 Van Nuys, CA 91405.

Tandy 1000 (The MUG) Meets fourth Wednesdays, 7 pm, 9027 E. Artesia, Bellflower, CA. Contact Dick Sherwood, 4014 Centralia St., Lakewood, 90712. (213) 421-4014. The MUG RBBS (213) 425-0022, members only.

Color America. Radio Shack color Computer SIG meets 2:30-5 pm on the third Saturday of the month at Rosemead Community Center, 3936 N. Muscatel Ave., Rosemead. Contact Mark Randall, 2227 Canyon Rd., Arcadia, CA 91006, (818) 355-6111.

The Los Angeles-Wilshire Color Computer Users' Group, a TRS-80 Color Computer Users' Group, meets the 2nd Saturday of each month, 12:30 pm-5:30 pm in the Felipe de Neve library's community room, 2820 W. 6th, Los Angeles. Call Milton, (213) 558-4909.

United Computer Federation-San Fernando Valley Chapter. Meets the fourth Tuesday of each month at the Tarzana Radio Shack, 18545 Ventura Blvd., 1/2 block west of Reseda Blvd. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy Color Computer user groups. For more information phone Pete Ellison, chapter president, at (818) 840-8902.

United Computer Federation-Los Angeles Chapter. Meets the fourth Thursday of each month at the Church of Christ recreational building, corner of Clark and Park streets, just off the 91 freeway in Bellflower. Meeting starts at 7:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy Color Computer user groups. For more information phone Gary James, chapter president, at (213) 420-7632.

United Computer Federation-Orange County Chapter. Meets the second Sunday of each month at the Mercury Savings building on Edinger Ave., 1 block north of Beach Blvd. in Westminster. Meeting starts at 1:30 pm. Meetings are open to the public and all are welcome. The UCF is a network of Tandy Color Computer user groups. For more information phone Allen Nedrow, chapter president, at (213) 692-3073.

SBT

The Orange County SBT Users Group is being formed and is seeking members who are interested in an atmosphere that promotes the better understanding and more efficient use of the SBT Accounting Software. Contact Jay Rubin, P.O. Box 5145, Newport Beach, CA 92662, (714) 720-8171.

SANYO

Sanyo-MS/DOS Table Top Computers, 14717 South Prairie Ave., Lawndale, CA 90260. (213) 679-1151.

Zenith-Sanyo Users Group meets 10 am every first and third Sunday at 401 S. La Brea Ave., Inglewood, CA 90301. Call Alan Gillen, (213) 674-0318 for information.

Sanyo Users Group of LA (SUGLA). Devoted to users of Sanyo MBC 550/555 micro business computer. Guests welcome. Dues $15/yr. Speakers, presentations, public domain software library, information, new hardware and software reviews. Meetings 2nd Wednesdays, 7 pm, CAL State University, LA, Student Union (Bldg. #5), 4th floor in South Pasadena Room. Contact Fred Blechman, (818) 346-7024.

TEXAS INSTRUMENTS

LA 99er Computer Group. TI 99/4A support, classes and SIGs, large software library, monthly newsletter. Demonstrations, bulk purchase discounts on hardware, software and books. A good group to join. Meetings at Torrance Public Library, 3301 Torrance Blvd. (corner of Madrone), Torrance, CA. 4th Wednesday of the month, 7 pm. Contact Terrie Masters, 148 S. Maple Drive, Beverly Hills, CA 90212, (213) 271-6930.

The TI-99 Club. Yes, there still are a lot of 99's and 99/4a's around. If you own one, then get in touch with these people. They have good info for TI owners. Meetings take place at the Westminster Community Center on the third Thursday of every month at 7:00 pm. For info, call (714) 842-0859.

TI-West (Los Angeles West Side Area). Meets at DeCoursey Engineering Laboratory, 11828 W. Jefferson Blvd., Culver City, on the 3rd Monday of each month. For information, contact Lew Howard at (213)397-9668.

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San Gabriel Valley TI 99/4 Users Group meets 1st Wed./mo. at 6:30 pm in the Covina Parkway, West Covina, CA. Contact Tom Padilla, (213) 330-8240.

TI Riverside UG. Supporting the TI 99/4A. Meetings at Collett School, 3rd Thursday, 7 p.m. Contact Ed Butcher, 3523 McKinley St., Riverside, (714) 686-0336.

San Fernando Valley TI 99/4A User Group. Library, Workshops, Newsletter, How To? For further information call Jim Edwards, (818) 248-9558, 5-10 pm. Meetings 2nd Wednesday of the month, 7:30 pm, Doctor's Conference Room, Sherman Oaks Community Hospital, 4929 Van Nuys Blvd.

Antelope Valley TI UG. TI User Group. Meetings at Palmdale Culture Center, 3rd Wed., 7 pm. Contact Len Rouw, 38540 26th St. East, (805) 947-6270.

El Toro 99 Home Computer Users Group. The ET-99 Home Computer User Group meets to demonstrate programs, equipment, and discuss techniques. Contact Ken Baldwin, 23065 Sonoita, Mission Viejo, CA 92641, (714) 855-0480. Meetings at Mercury Savings and Loan, 1-5 and Lake Forest, El Toro, 2nd Saturday of each month 9 am - 12 noon.

Tri-Valley 99'ers. We have what you're looking for! Interesting guest speakers, software/hardware demonstrations, large group library, monthly newsletters. We serve the entire Conejo Valley and beyond! Contact Steve Mehr (805) 496-8725 or Chuck Salvatore, (805) 527-4129 for more information.

BUG (Brea 99er's Users Group). Meets the first Monday of the month at 7:30 pm at the Western Federal Savings meeting room, #10 La Habra Fashion Square, corner Beach and Imperial, in La Habra. For further information call Bob August at (714) 871-3405.

San Fernando Valley Texas Instruments Professional Computer User Group (SFV TI-PRO USER GROUP). Meets at 9017 Reseda Blvd. Suite #212, Northridge, on the 3rd Sunday of each month at 10:00 am. We serve the entire San Fernando and Santa Clara Valleys. Group meets to discuss: how-to techniques, programs, equipment and software. All are welcome —bring a friend. TI-Pro/AutoCAD Users are also welcome. For more info, contact Marcus Swed at (818) 993-3151 during the day and at (818) 366-0886 evenings.

The Pomona Valley 99ers Computer Users Group. Meets locally every month on the second Monday of the month. Anyone interested in home computing is welcome to come to our meetings at 7:00 pm. We meet at the Cortez Elementary School at 12750 Carissa Ave., Chino, which is south of the Pomona Freeway and west of Mountain Ave. There are demos of hardware and software. Mostly for the Texas Instruments 99/4A computer. Lots of discussion. We try to educate and stimulate interest in computer literacy and programming. If you become a member of this non-profit group you'll get a monthly newsletter and be able to get copies of the programs in the large club library of public domain software.

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Timex-Sinclair. South Bay and West Side groups. Call John W. Petersen at (213) 545-9581 anytime or Dr. George Kuby (213) 201-2014 after 3 pm for more information.

TOMY

Tomy Tutor computer user group. Contact Eugene C. Dinovo, P.O. Box 37, Sepulveda, CA 91343.

VICTOR

West Los Angeles Victor Users Group (WLA-VUG). Victor 9000 users - you are not alone! Meet other users. Free V9000 software & purchasing discounts for members. Victor-specific bulletin board (818) 989-2216. Meetings at 8651 Olin St., LA 90034, 7 pm, 3rd Thursday, every month except December. Contact Roger Goodman, (213) 558-8363.

Orange County Victor 9000 User Group. Meets fourth Wednesday of the month at Mayward Siler & Assoc., 12062 Valley View, Suite 210, Garden Grove, CA 92645. Contact Don Henderson, 1201 Drayton Way, Tustin, CA 92680. Phone: (714) 730-6015.

WANG

Wang WP Users Group. Meets 4th Thurs. of each odd month, 6 pm. Newsletter, speakers,information network. Call for meeting place: Steven Hirsh, (213) 255-5515, or write 2858 El Roble Drive., Los Angeles 90041.

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X.C.E.L. (XScribe Court Reporters for Education and Learning). XScribe users can share knowledge, have sessions on resolving problems encountered, and keep abreast of activities in the C.A.T. field. Contact Diane Altshuler, XScribe Corp., 3366 N. Torrey Pines Ct. Suite 300, La Jolla, CA 92037. (800) 854-2919.

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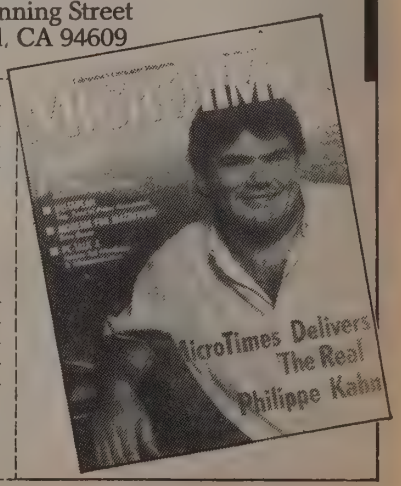

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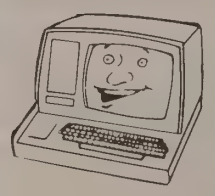

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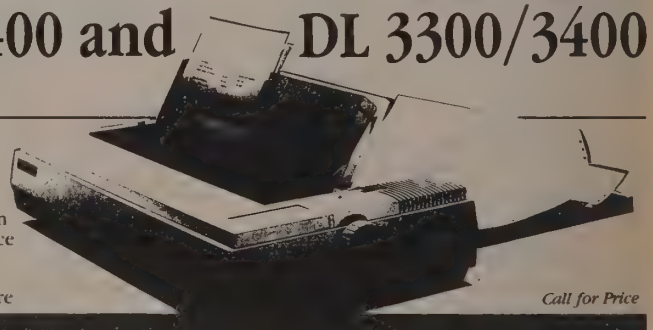

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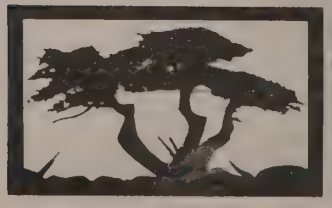

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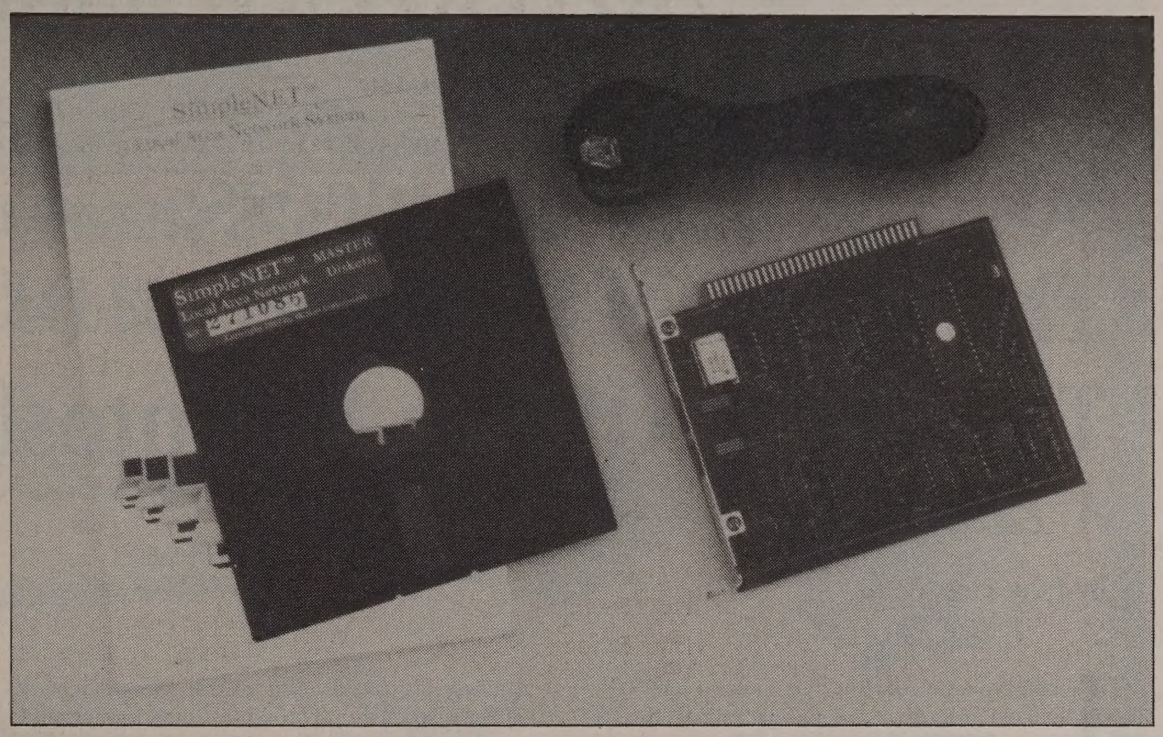

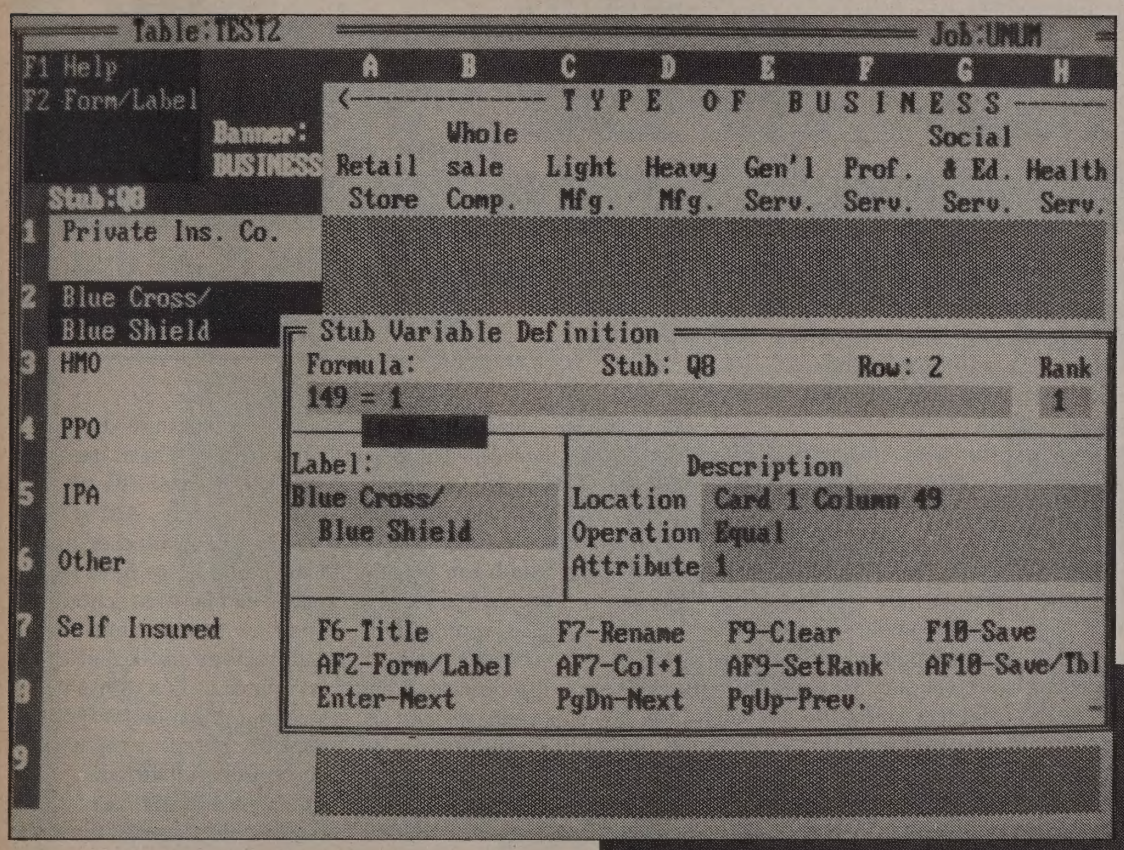

Multi-Tasking A-Cross Puts Cross Tabulation In Spreadsheet Form

A-Cross from Strawberry Software is a data analysis, cross tabulation program that incorporates a runtime version of Quarterdeck's *DESQview*, thus allowing it to do multi-tasking. *A-Cross* can create, compute and print tables all at the same time. *A-Cross* does not require the use of command language. Simple formulas which define variables are translated into English on the screen. Rows and columns are displayed in spreadsheet form as they will appear in finished tables. ($995) A run-time version, limited to a single database, is available for $85. Strawberry Software, 42 Pleasant Street, Watertown, MA 02172. (617) 923-8800.

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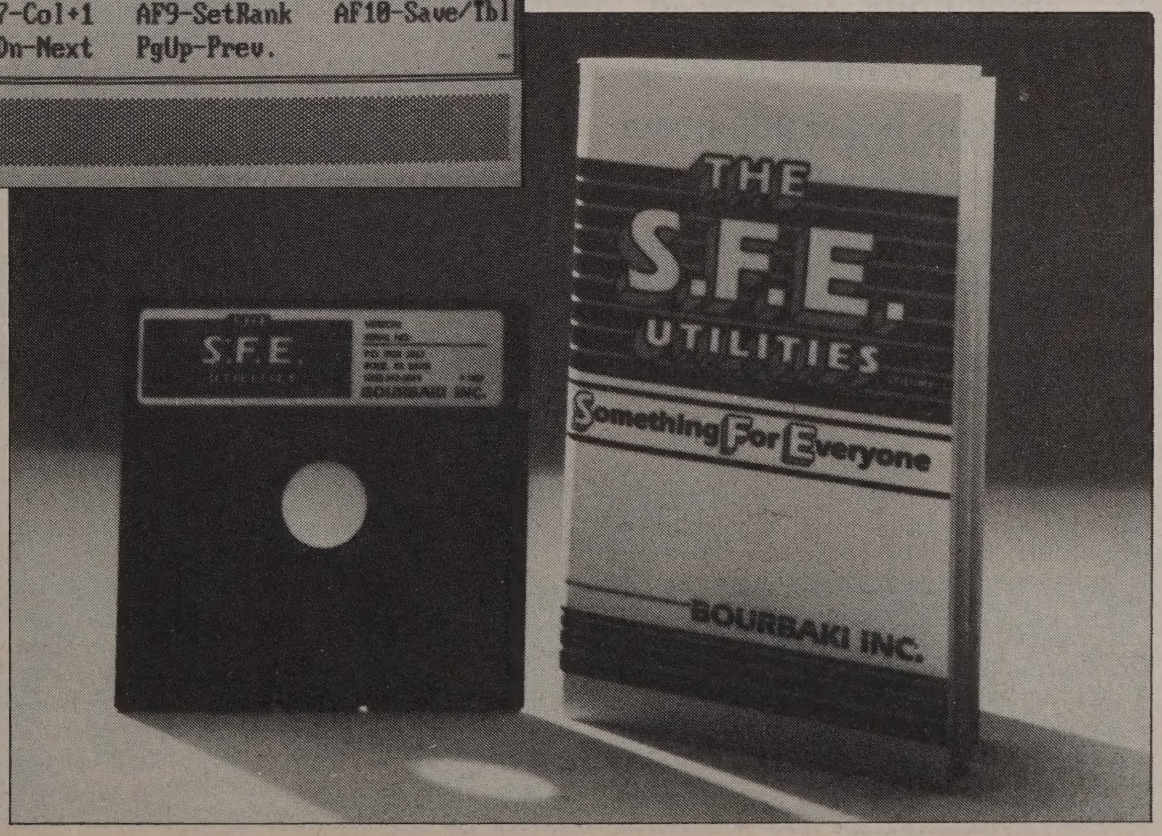

DVORAK'S LAST COLUMN

Success, Sweet Success: The Spice Of Life And The Death Of The Macintosh

A Tale Of Woe

By John C. Dvorak

I hated to admit it. But that's what I had to do when I recently gave a short talk to the GE PC co-ordinators at a meeting in Tampa Bay a couple of months ago. I must now admit that the Mac has been accepted by the business community. It's a trend. It will ruin the Mac, Mac software development, and, eventually, the Mac community itself. Apple asked for it. In fact, Apple begged for this to happen. Apple will live to regret it.

Background. It's happening everywhere. The market for the IBM PC has flattened and its growth stymied by some fear factor. Latecomers who are simply too afraid to learn a few DOS commands have to be hand-held to such a degree that the smart money in large corporations has switched to the Mac. Who needs to babysit a computerphobe? So, enter the Mac. "Here. Look! Point and click. Point and click. See how easy it is? Now read this book and leave me alone. Central services will come in to hook it to the network." General Electric now pushes the Mac as the machine of choice for the corporate worker. It's just the beginning.

Until recently, Mac users never bought software. They simply copied it for the good of the community. This forced software vendors to keep producing better and better products under the mistaken impression that it was their fault if sales dropped dead after three months.

At first glance this tactic appears to be laughable. We all know that the Mac at its best is complex and buggy. Right? Wrong. The joke is on us. This new crowd sees the world differently. Old-time Mac users better get used to the new order of things.

This crowd, for example, will watch a screen dimmer go berserk and ruin a spreadsheet because of some bug. These new users immediately think it was their fault — some wrongly pushed button. In short, these users seem plumb stupid (at least by our old standards). Perhaps ridiculously naive is a more accurate description.

While many readers will say "so what?" to this, I suggest that this throng presents an immediate threat to the future of the Macintosh.

For starters, this group, whether dumb or naive, is surely dull. They are corporate computer users who have a machine because they have to. At first they will only use it to do spreadsheets at budget time. A few will learn to play a game or two, and maybe one or two might figure out a mailing list program or phone dialer. The most used programs will be in their own image — dull.

Note that this is no small group of duds we're talking about. This is a horde. A horde that the greedy software vendors will cater to once they discover that this corporate pack is mightily different from the old guard. First of all — they buy software! Here's a new concept. Until recently, Mac users never bought software. They simply copied it for the good of the community. This forced software vendors to keep producing better and better products under the mistaken impression that it was their fault if sales dropped dead after three months when, coincidentally, the bootleg pipeline filled to capacity.

Now they can rake in the dough. So forget about innovation. Besides that, the corporate grey-suited dullard doesn't want anything too fancy. Heaven forbid the machine talks or makes too much noise. They might get in trouble from their supervisor, don't you know.

To make the new scene more complex we add another new variable — the serious female user. "That will loosen things up!" say the pundits. Many people have always felt that the Mac was a feminine machine and that it naturally appealed to females. When one examines the percentage of women who subscribe to, say *MacUser* or *Macworld* to the number of women who subscribe to *PC* magazine, one finds the percentage of females is higher in the Mac category. For example, in the world of the PC, we can expect that a maximum of 10% of the readers are female. In the world of the Mac it's 15 – 20% and growing. Needless to say this difference hardly makes the Mac a "girl's computer." Nonetheless, there is a difference, and if women are flocking anywhere they are flocking to the Mac.

I look back at old columns and see that my old theories are kaput. The Mac won't be the yuppie status symbol as I predicted. The true yuppie has a fast IBM PC-AT that he or she never uses.

Unfortunately, these newcomers are the serious, the somber and the sullen. These are not the women in the California Cooler ads or the backup singers to Spuds McKenzie. Always in a business suit, they never joke around or have much fun (although they all claim to have been incredible cut-ups "back when I was in school"). They continually experiment with their hair with the deep seated sentiment and belief that it would look better in a bun. In fact, these corporate women are worse than the men (or better, depending on your feminist perspective) when it comes to being dull, boring and serious.

When you combine the new abundance of dull women with their dull men counterparts, it's like the Night of The Living Dead — relentless zombies who can't take a joke. Their motto: "I don't get it."

Are these the kind of people we want to welcome into the community? Heck no. But what can we do? Apple encouraged them to join in the fun. The fun part will soon be verboten.

Now I look back at old columns and see that my old theories are kaput. The Mac won't be the yuppie status symbol as I predicted. The true yuppie has a fast IBM PC-AT that he or she never uses. Besides that, the stock market plummet put them on the skids for good. I also thought that the Mac was to be the class act machine for today's top executive. Too many low level clerks use them nowadays, says the executive.

The real tragedy, though, is that the rosy Macintosh world of creativity will soon be a memory — a vision destroyed — usurped by the stolid, the boresome and the lovers of the mundane. The future is here. Rejoice. Rejoice. And have a good stiff drink. □

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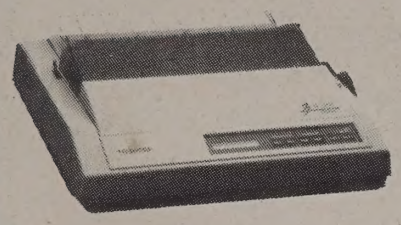

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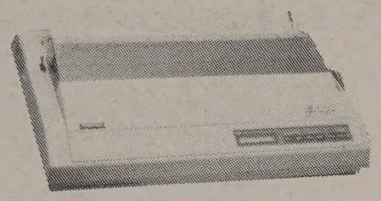

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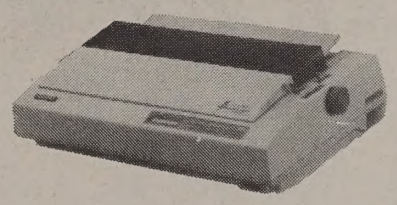

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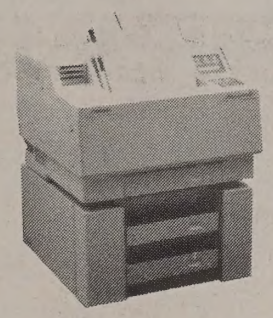

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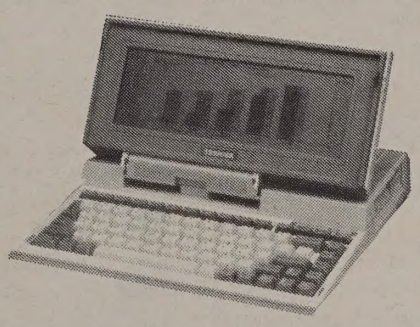

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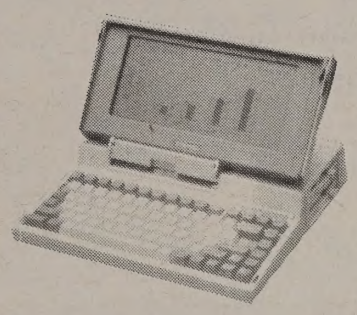

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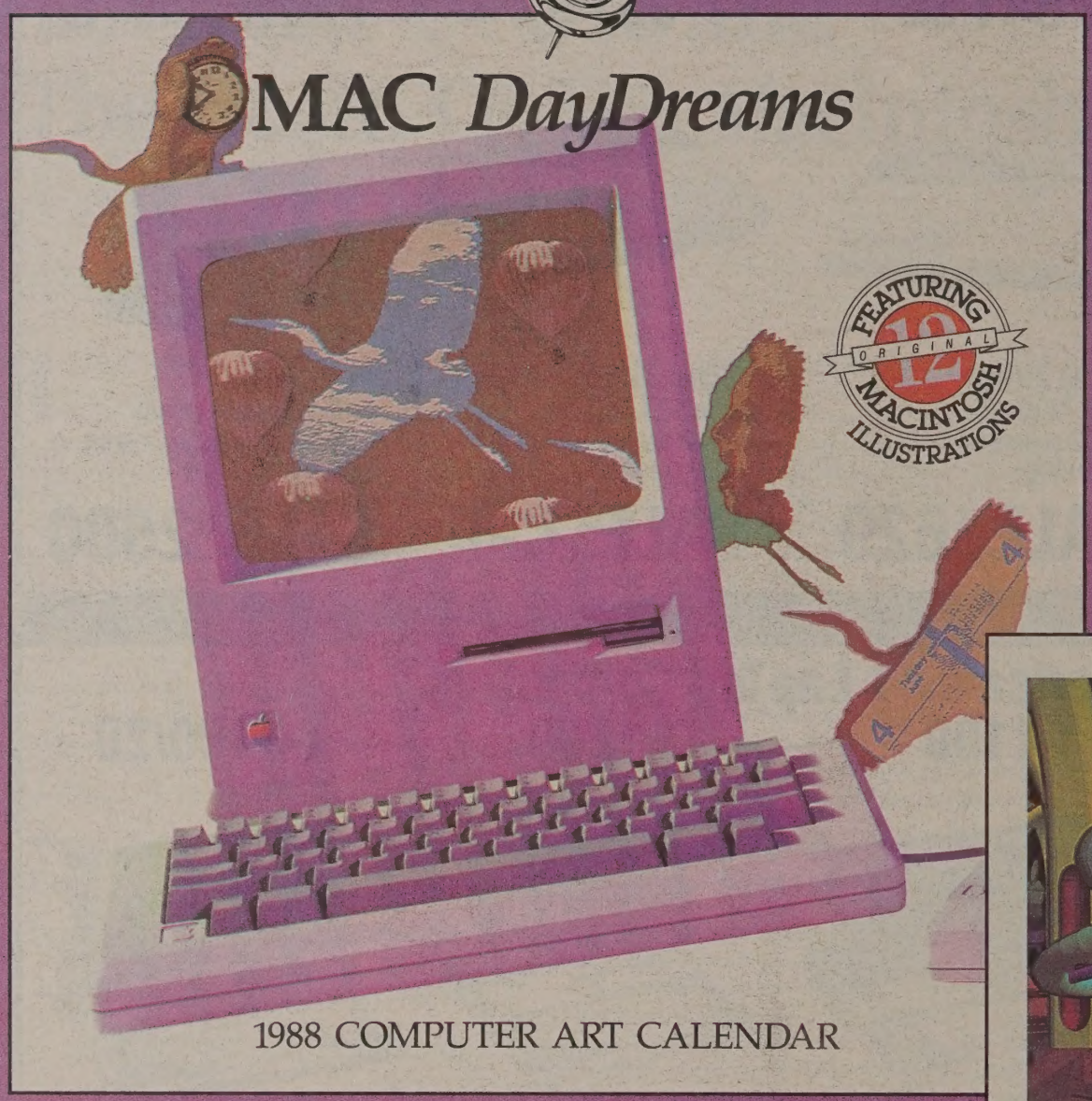

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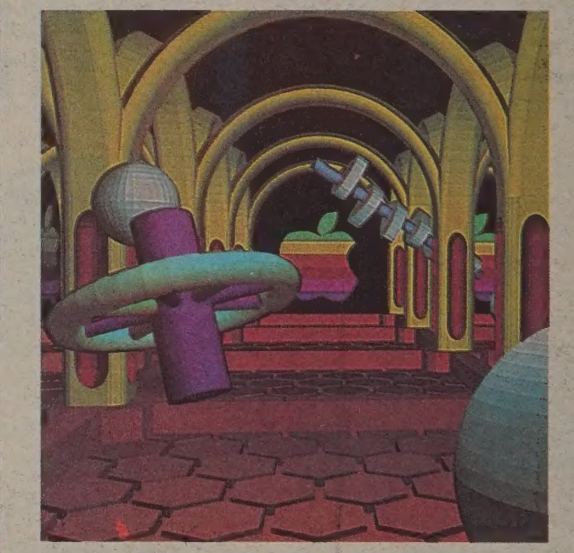

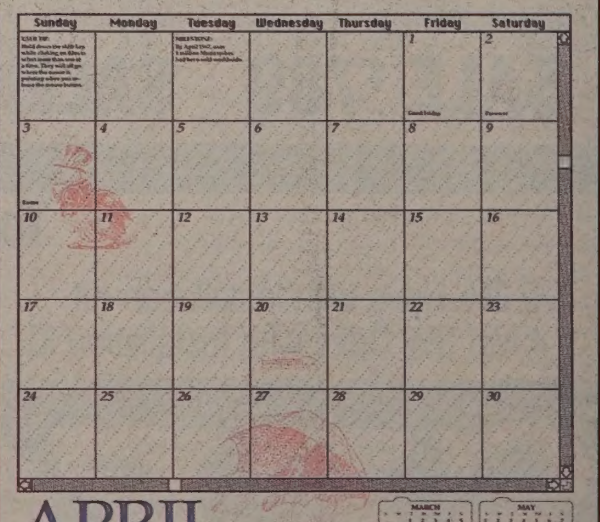

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